

212583.ST25  
SEQUENCE LISTING

<110> Nickoloff, Brian  
Miele, Lucio

<120> METHOD AND REAGENTS FOR EPITHELIAL BARRIER FORMATION AND TREATMENT  
OF MALIGNANT AND BENIGN SKIN DISORDERS BY MODULATING THE NOTCH PATHWAY

<130> 212583

<140> Unassigned

<141> 2001-08-31

<150> US 60/229,614

<151> 2000-08-31

<160> 18

<170> PatentIn version 3.1

<210> 1

<211> 7332

<212> DNA

<213> Artificial sequence

<220>

<223> Constitutively Active Notch-1

<220>

<221> CDS

<222> (1)..(7332)

<223>

<220>

<221> misc\_feature

<222> (5288)..(5288)

<223> n is "a," "t," "g," or "c"

<220>

<221> misc\_feature

<222> (5359)..(5359)

<223> n is "a," "t," "g," or "c"

<400> 1

atg	ccg	ccg	ctc	ctg	gcg	ccc	ctg	ctc	tgc	ctg	gcg	ctg	ctg	ccc	gcg	48
Met	Pro	Pro	Leu	Leu	Ala	Pro	Leu	Leu	Cys	Leu	Ala	Leu	Leu	Pro	Ala	
1			5						10					15		
ctc	gcc	gca	cga	ggc	ccg	cga	tgc	tcc	cag	ccc	ggg	gag	acc	tgc	ctg	96
Leu	Ala	Ala	Arg	Gly	Pro	Arg	Cys	Ser	Gln	Pro	Gly	Glu	Thr	Cys	Leu	
			20					25					30			
aat	ggc	ggg	aag	tgt	gaa	gcg	gcc	aat	ggc	acg	gag	gcc	tgc	gtc	tgt	144
Asn	Gly	Gly	Lys	Cys	Glu	Ala	Ala	Asn	Gly	Thr	Glu	Ala	Cys	Val	Cys	
		35					40					45				
ggc	ggg	gcc	ttc	gtg	ggc	ccg	cga	tgc	cag	gac	ccc	aac	ccg	tgc	ctc	192
Gly	Gly	Ala	Phe	Val	Gly	Pro	Arg	Cys	Gln	Asp	Pro	Asn	Pro	Cys	Leu	
	50					55					60					
agc	acc	ccc	tgc	aag	aac	gcc	ggg	aca	tgc	cac	gtg	gtg	gac	cgc	aga	240
Ser	Thr	Pro	Cys	Lys	Asn	Ala	Gly	Thr	Cys	His	Val	Val	Asp	Arg	Arg	
65					70					75					80	
ggc	gtg	gca	gac	tat	gcc	tgc	agc	tgt	gcc	ctg	ggc	ttc	tct	ggg	ccc	288
Gly	Val	Ala	Asp	Tyr	Ala	Cys	Ser	Cys	Ala	Leu	Gly	Phe	Ser	Gly	Pro	
				85					90					95		
ctc	tgc	ctg	aca	ccc	ctg	gac	aac	gcc	tgc	ctc	acc	aac	ccc	tgc	cgc	336
Leu	Cys	Leu	Thr	Pro	Leu	Asp	Asn	Ala	Cys	Leu	Thr	Asn	Pro	Cys	Arg	
			100					105					110			
aac	ggg	ggc	acc	tgc	gac	ctg	ctc	acg	ctg	acg	gag	tac	aag	tgc	cgc	384
Asn	Gly	Gly	Thr	Cys	Asp	Leu	Leu	Thr	Leu	Thr	Glu	Tyr	Lys	Cys	Arg	
		115					120					125				
tgc	ccg	ccc	ggc	tgg	tca	ggg	aaa	tgc	tgc	cag	cag	gct	gac	ccg	tgc	432
Cys	Pro	Pro	Gly	Trp	Ser	Gly	Lys	Ser	Cys	Gln	Gln	Ala	Asp	Pro	Cys	
	130					135					140					
gcc	tcc	aac	ccc	tgc	gcc	aac	ggg	ggc	cag	tgc	ctg	ccc	ttc	gag	gcc	480
Ala	Ser	Asn	Pro	Cys	Ala	Asn	Gly	Gly	Gln	Cys	Leu	Pro	Phe	Glu	Ala	
145					150					155					160	
tcc	tac	atc	tgc	cac	tgc	cca	ccc	agc	ttc	cat	ggc	ccc	acc	tgc	cgg	528
Ser	Tyr	Ile	Cys	His	Cys	Pro	Pro	Ser	Phe	His	Gly	Pro	Thr	Cys	Arg	
				165					170					175		
cag	gat	gtc	aac	gag	tgt	ggc	cag	aag	ccc	agg	ctt	tgc	cgc	cac	gga	576
Gln	Asp	Val	Asn	Glu	Cys	Gly	Gln	Lys	Pro	Arg	Leu	Cys	Arg	His	Gly	
			180					185					190			
ggc	acc	tgc	cac	aac	gag	gtc	ggc	tcc	tac	cgc	tgc	gtc	tgc	cgc	gcc	624
Gly	Thr	Cys	His	Asn	Glu	Val	Gly	Ser	Tyr	Arg	Cys	Val	Cys	Arg	Ala	
		195					200					205				

212583.ST25																672
acc	cac	act	ggc	ccc	aac	tgc	gag	cgg	ccc	tac	gtg	ccc	tgc	agc	ccc	
Thr	His	Thr	Gly	Pro	Asn	Cys	Glu	Arg	Pro	Tyr	Val	Pro	Cys	Ser	Pro	
	210					215					220					
tcg	ccc	tgc	cag	aac	ggg	ggc	acc	tgc	cgc	ccc	acg	ggc	gac	gtc	acc	720
Ser	Pro	Cys	Gln	Asn	Gly	Gly	Thr	Cys	Arg	Pro	Thr	Gly	Asp	Val	Thr	
	225				230					235					240	
cac	gag	tgt	gcc	tgc	ctg	cca	ggc	ttc	acc	ggc	cag	aac	tgt	gag	gaa	768
His	Glu	Cys	Ala	Cys	Leu	Pro	Gly	Phe	Thr	Gly	Gln	Asn	Cys	Glu	Glu	
				245					250					255		
aat	atc	gac	gat	tgt	cca	gga	aac	aac	tgc	aag	aac	ggg	ggt	gcc	tgt	816
Asn	Ile	Asp	Asp	Cys	Pro	Gly	Asn	Asn	Cys	Lys	Asn	Gly	Gly	Ala	Cys	
			260					265					270			
gtg	gac	ggc	gtg	aac	acc	tac	aac	tgc	ccg	tgc	ccg	cca	gag	tgg	aca	864
Val	Asp	Gly	Val	Asn	Thr	Tyr	Asn	Cys	Pro	Cys	Pro	Pro	Glu	Trp	Thr	
		275					280					285				
ggt	cag	tac	tgt	acc	gag	gat	gtg	gac	gag	tgc	cag	ctg	atg	cca	aac	912
Gly	Gln	Tyr	Cys	Thr	Glu	Asp	Val	Asp	Glu	Cys	Gln	Leu	Met	Pro	Asn	
	290					295					300					
gcc	tgc	cag	aac	ggc	ggg	acc	tgc	cac	aac	acc	cac	ggt	ggc	tac	aac	960
Ala	Cys	Gln	Asn	Gly	Gly	Thr	Cys	His	Asn	Thr	His	Gly	Gly	Tyr	Asn	
	305				310					315					320	
tgc	gtg	tgt	gtc	aac	ggc	tgg	act	ggt	gag	gac	tgc	agc	gag	aac	att	1008
Cys	Val	Cys	Val	Asn	Gly	Trp	Thr	Gly	Glu	Asp	Cys	Ser	Glu	Asn	Ile	
				325					330					335		
gat	gac	tgt	gcc	agc	gcc	gcc	tgc	ttc	cac	ggc	gcc	acc	tgc	cat	gac	1056
Asp	Asp	Cys	Ala	Ser	Ala	Ala	Cys	Phe	His	Gly	Ala	Thr	Cys	His	Asp	
			340					345					350			
cgt	gtg	gcc	tcc	ttt	tac	tgc	gag	tgt	ccc	cat	ggc	cgc	aca	ggt	ctg	1104
Arg	Val	Ala	Ser	Phe	Tyr	Cys	Glu	Cys	Pro	His	Gly	Arg	Thr	Gly	Leu	
		355					360					365				
ctg	tgc	cac	ctc	aac	gac	gca	tgc	atc	agc	aac	ccc	tgt	aac	gag	ggc	1152
Leu	Cys	His	Leu	Asn	Asp	Ala	Cys	Ile	Ser	Asn	Pro	Cys	Asn	Glu	Gly	
	370					375					380					
tcc	aac	tgc	gac	acc	aac	cct	gtc	aat	ggc	aag	gcc	atc	tgc	acc	tgc	1200
Ser	Asn	Cys	Asp	Thr	Asn	Pro	Val	Asn	Gly	Lys	Ala	Ile	Cys	Thr	Cys	
	385				390					395					400	
ccc	tcg	ggg	tac	acg	ggc	ccg	gcc	tgc	agc	cag	gac	gtg	gat	gag	tgc	1248
Pro	Ser	Gly	Tyr	Thr	Gly	Pro	Ala	Cys	Ser	Gln	Asp	Val	Asp	Glu	Cys	
				405					410					415		
tcg	ctg	ggt	gcc	aac	ccc	tgc	gag	cat	gcg	ggc	aag	tgc	atc	aac	acg	1296
Ser	Leu	Gly	Ala	Asn	Pro	Cys	Glu	His	Ala	Gly	Lys	Cys	Ile	Asn	Thr	
			420					425					430			
ctg	ggc	tcc	ttc	gag	tgc	cag	tgt	ctg	cag	ggc	tac	acg	ggc	ccc	cga	1344
Leu	Gly	Ser	Phe	Glu	Cys	Gln	Cys	Leu	Gln	Gly	Tyr	Thr	Gly	Pro	Arg	
		435					440					445				
tgc	gag	atc	gac	gtc	aac	gag	tgc	gtc	tcg	aac	ccg	tgc	cag	aac	gac	1392
Cys	Glu	Ile	Asp	Val	Asn	Glu	Cys	Val	Ser	Asn	Pro	Cys	Gln	Asn	Asp	
	450					455					460					
gcc	acc	tgc	ctg	gac	cag	att	ggg	gag	ttc	cag	tgc	atg	tgc	atg	ccc	1440
Ala	Thr	Cys	Leu	Asp	Gln	Ile	Gly	Glu	Phe	Gln	Cys	Met	Cys	Met	Pro	
					470					475					480	

ggc tac gag ggt gtg cac tgc gag gtc aac aca gac gag tgt gcc agc	1488
Gly Tyr Glu Gly Val His Cys Glu Val Asn Thr Asp Glu Cys Ala Ser	
	485
	490
	495
agc ccc tgc ctg cac aat ggc cgc tgc ctg gac aag atc aat gag ttc	1536
Ser Pro Cys Leu His Asn Gly Arg Cys Leu Asp Lys Ile Asn Glu Phe	
	500
	505
	510
cag tgc gag tgc ccc acg ggc ttc act ggg cat ctg tgc cag tac gat	1584
Gln Cys Glu Cys Pro Thr Gly Phe Thr Gly His Leu Cys Gln Tyr Asp	
	515
	520
	525
gtg gac gag tgt gcc agc acc ccc tgc aag aat ggt gcc aag tgc ctg	1632
Val Asp Glu Cys Ala Ser Thr Pro Cys Lys Asn Gly Ala Lys Cys Leu	
	530
	535
	540
gac gga ccc aac act tac acc tgt gtg tgc acg gaa ggg tac acg ggg	1680
Asp Gly Pro Asn Thr Tyr Thr Cys Val Cys Thr Glu Gly Tyr Thr Gly	
	545
	550
	555
	560
acg cac tgc gag gtg gac atc gat gag tgc gac ccc gac ccc tgc cac	1728
Thr His Cys Glu Val Asp Ile Asp Glu Cys Asp Pro Asp Pro Cys His	
	565
	570
	575
tac ggc tcc tgc aag gac ggc gtc gcc acc ttc acc tgc ctc tgc cgc	1776
Tyr Gly Ser Cys Lys Asp Gly Val Ala Thr Phe Thr Cys Leu Cys Arg	
	580
	585
	590
cca ggc tac acg ggc cac cac tgc gag acc aac atc aac gag tgc tcc	1824
Pro Gly Tyr Thr Gly His His Cys Glu Thr Asn Ile Asn Glu Cys Ser	
	595
	600
	605
agc cag ccc tgc cgc cta cgg ggc acc tgc cag gac ccg gac aac gcc	1872
Ser Gln Pro Cys Arg Leu Arg Gly Thr Cys Gln Asp Pro Asp Asn Ala	
	610
	615
	620
tac ctc tgc ttc tgc ctg aag ggc acc aca gga ccc aac tgc gag atc	1920
Tyr Leu Cys Phe Cys Leu Lys Gly Thr Thr Gly Pro Asn Cys Glu Ile	
	625
	630
	635
	640
aac ctg gat gac tgt gcc agc agc ccc tgc gac tcg ggc acc tgt ctg	1968
Asn Leu Asp Asp Cys Ala Ser Ser Pro Cys Asp Ser Gly Thr Cys Leu	
	645
	650
	655
gac aag atc gat ggc tac gag tgt gcc tgt gag ccg ggc tac aca ggg	2016
Asp Lys Ile Asp Gly Tyr Glu Cys Ala Cys Glu Pro Gly Tyr Thr Gly	
	660
	665
	670
agc atg tgt aac agc aac atc gat gag tgt gcg ggc aac ccc tgc cac	2064
Ser Met Cys Asn Ser Asn Ile Asp Glu Cys Ala Gly Asn Pro Cys His	
	675
	680
	685
aac ggg ggc acc tgc gag gac ggc atc aat ggc ttc acc tgc cgc tgc	2112
Asn Gly Gly Thr Cys Glu Asp Gly Ile Asn Gly Phe Thr Cys Arg Cys	
	690
	695
	700
ccc gag ggc tac cac gac ccc acc tgc ctg tct gag gtc aat gag tgc	2160
Pro Glu Gly Tyr His Asp Pro Thr Cys Leu Ser Ser Glu Val Asn Glu Cys	
	705
	710
	715
	720
aac agc aac ccc tgc gtc cac ggg gcc tgc cgg gac agc ctc aac ggg	2208
Asn Ser Asn Pro Cys Val His Gly Ala Cys Arg Asp Ser Leu Asn Gly	
	725
	730
	735
tac aag tgc gac tgt gac cct ggg tgg agt ggg acc aac tgt gac atc	2256
Tyr Lys Cys Asp Cys Asp Pro Gly Trp Ser Gly Thr Asn Cys Asp Ile	
	740
	745
	750

212583.ST25																	
aac Asn	aac Asn	aac Asn 755	gag Glu	tgt Cys	gaa Glu	tcc Ser	aac Asn 760	cct Pro	tgt Cys	gtc Val	aac Asn	ggc Gly 765	ggc Gly	acc Thr	tgc Cys	2304	
aaa Lys	gac Asp 770	atg Met	acc Thr	agt Ser	ggc Gly	atc Ile 775	gtg Val	tgc Cys	acc Thr	tgc Cys	cgg Arg 780	gag Glu	ggc Gly	ttc Phe	agc Ser	2352	
ggt Gly 785	ccc Pro	aac Asn	tgc Cys	cag Gln	acc Thr 790	aac Asn	atc Ile	aac Asn	gag Glu	tgt Cys 795	gcg Ala	tcc Ser	aac Asn	cca Pro	tgt Cys 800	2400	
ctg Leu	aac Asn	aag Lys	ggc Gly	acg Thr 805	tgt Cys	att Ile	gac Asp	gac Asp	gtt Val 810	gcc Ala	ggg Gly	tac Tyr	aag Lys	tgc Cys 815	aac Asn	2448	
tgc Cys	ctg Leu	ctg Leu	ccc Pro 820	tac Tyr	aca Thr	ggt Gly	gcc Ala	acg Thr 825	tgt Cys	gag Glu	gtg Val	gtg Val	ctg Leu 830	gcc Ala	ccg Pro	2496	
tgt Cys	gcc Ala	ccc Pro 835	agc Ser	ccc Pro	tgc Cys	aga Arg	aac Asn 840	ggc Gly	ggg Gly	gag Glu	tgc Cys	agg Arg 845	caa Gln	tcc Ser	gag Glu	2544	
gac Asp	tat Tyr 850	gag Glu	agc Ser	ttc Phe	tcc Ser	tgt Cys 855	gtc Val	tgc Cys	ccc Pro	acg Thr	gct Ala 860	ggg Gly	gcc Ala	aaa Lys	ggg Gly	2592	
cag Gln 865	acc Thr	tgt Cys	gag Glu	gtc Val	gac Asp 870	atc Ile	aac Asn	gag Glu	tgc Cys	gtt Val 875	ctg Leu	agc Ser	ccg Pro	tgc Cys	cgg Arg 880	2640	
cac His	ggc Gly	gca Ala	tcc Ser	tgc Cys 885	cag Gln	aac Asn	acc Thr	cac His	ggc Gly 890	gss Xaa	tac Tyr	cgc Arg	tgc Cys	cac His 895	tgc Cys	2688	
cag Gln	gcc Ala	ggc Gly	tac Tyr 900	agt Ser	ggg Gly	cgc Arg	aac Asn	tgc Cys 905	gag Glu	acc Thr	gac Asp	atc Ile	gac Asp 910	gac Asp	tgc Cys	2736	
cgg Arg	ccc Pro	aac Asn 915	ccg Pro	tgt Cys	cac His	aac Asn	ggg Gly 920	ggc Gly	tcc Ser	tgc Cys	aca Thr	gac Asp 925	ggc Gly	atc Ile	aac Asn	2784	
acg Thr	gcc Ala 930	ttc Phe	tgc Cys	gac Asp	tgc Cys	ctg Leu 935	ccc Pro	ggc Gly	ttc Phe	cgg Arg	ggc Gly 940	act Thr	ttc Phe	tgt Cys	gag Glu	2832	
gag Glu 945	gac Asp	atc Ile	aac Asn	gag Glu	tgt Cys 950	gcc Ala	agt Ser	gac Asp	ccc Pro	tgc Cys 955	cgc Arg	aac Asn	ggg Gly	gcc Ala	aac Asn 960	2880	
tgc Cys	acg Thr	gac Asp	tgc Cys	gtg Val 965	gac Asp	agc Ser	tac Tyr	acg Thr	tgc Cys 970	acc Thr	tgc Cys	ccc Pro	gca Ala	ggc Gly 975	ttc Phe	2928	
agc Ser	ggg Gly	atc Ile	cac His 980	tgt Cys	gag Glu	aac Asn	aac Asn	acg Thr 985	cct Pro	gac Asp	tgc Cys	aca Thr	gag Glu 990	agc Ser	tcc Ser	2976	
tgc Cys	ttc Phe	aac Asn 995	ggt Gly	ggc Gly	acc Thr	tgc Cys	gtg Val 1000	gac Asp	ggc Gly	atc Ile	aac Asn	tcg Ser 1005	ttc Phe	acc Thr	tgc Cys	3024	
ctg Leu	tgt Cys 1010	cca Pro	ccc Pro	ggc Gly	ttc Phe	acg Thr 1015	ggc Gly	agc Ser	tac Tyr	tgc Cys	cag Gln 1020	cac His	gta Val	gtc Val		3069	

212583.ST25															
aat Asn	gag Glu 1025	tgc Cys	gac Asp	tca Ser	cga Arg	ccc Pro 1030	tgc Cys	ctg Leu	cta Leu	ggc Gly	ggc Gly 1035	acc Thr	tgt Cys	cag Gln	3114
gac Asp	ggt Gly 1040	cgc Arg	ggt Gly	ctc Leu	cac His	agg Arg 1045	tgc Cys	acc Thr	tgc Cys	ccc Pro	cag Gln 1050	ggc Gly	tac Tyr	act Thr	3159
ggc Gly	ccc Pro 1055	aac Asn	tgc Cys	cag Gln	aac Asn	ctt Leu 1060	gtg Val	cac His	tgg Trp	tgt Cys	gac Asp 1065	tcc Ser	tcg Ser	ccc Pro	3204
tgc Cys	aag Lys 1070	aac Asn	ggc Gly	ggc Gly	aaa Lys	tgc Cys 1075	tgg Trp	cag Gln	acc Thr	cac His	acc Thr 1080	cag Gln	tac Tyr	cgc Arg	3249
tgc Cys	gag Glu 1085	tgc Cys	ccc Pro	agc Ser	ggc Gly	tgg Trp 1090	acc Thr	ggc Gly	ctt Leu	tac Tyr	tgc Cys 1095	gac Asp	gtg Val	ccc Pro	3294
agc Ser	gtg Val 1100	tcc Ser	tgt Cys	gag Glu	gtg Val	gct Ala 1105	gcg Ala	cag Gln	cga Arg	caa Gln	ggt Gly 1110	gtt Val	gac Asp	gtt Val	3339
gcc Ala	cgc Arg 1115	ctg Leu	tgc Cys	cag Gln	cat His	gga Gly 1120	ggg Gly	ctc Leu	tgt Cys	gtg Val	gac Asp 1125	gcg Ala	ggc Gly	aac Asn	3384
acg Thr	cac His 1130	cac His	tgc Cys	cgc Arg	tgc Cys	cag Gln 1135	gcg Ala	ggc Gly	tac Tyr	aca Thr	ggc Gly 1140	agc Ser	tac Tyr	tgt Cys	3429
gag Glu	gac Asp 1145	ctg Leu	gtg Val	gac Asp	gag Glu	tgc Cys 1150	tca Ser	ccc Pro	agc Ser	ccc Pro	tgc Cys 1155	cag Gln	aac Asn	ggg Gly	3474
gcc Ala	acc Thr 1160	tgc Cys	acg Thr	gac Asp	tac Tyr	ctg Leu 1165	ggc Gly	ggc Gly	tac Tyr	tcc Ser	tgc Cys 1170	aag Lys	tgc Cys	gtg Val	3519
gcc Ala	ggc Gly 1175	tac Tyr	cac His	ggg Gly	gtg Val	aac Asn 1180	tgc Cys	tct Ser	gag Glu	gag Glu	atc Ile 1185	gac Asp	gag Glu	tgc Cys	3564
ctc Leu	tcc Ser 1190	cac His	ccc Pro	tgc Cys	cag Gln	aac Asn 1195	ggg Gly	ggc Gly	acc Thr	tgc Cys	ctc Leu 1200	gac Asp	ctc Leu	ccc Pro	3609
aac Asn	acc Thr 1205	tac Tyr	aag Lys	tgc Cys	tcc Ser	tgc Cys 1210	cca Pro	cgg Arg	ggc Gly	act Thr	cag Gln 1215	ggt Gly	gtg Val	cac His	3654
tgt Cys	gag Glu 1220	atc Ile	aac Asn	gtg Val	gac Asp	gac Asp 1225	tgc Cys	aat Asn	ccc Pro	ccc Pro	gtt Val 1230	gac Asp	ccc Pro	gtg Val	3699
tcc Ser	cgg Arg 1235	agc Ser	ccc Pro	aag Lys	tgc Cys	ttt Phe 1240	aac Asn	aac Asn	ggc Gly	acc Thr	tgc Cys 1245	gtg Val	gac Asp	cag Gln	3744
gtg Val	ggc Gly 1250	ggc Gly	tac Tyr	agc Ser	tgc Cys	acc Thr 1255	tgc Cys	ccg Pro	ccg Pro	ggc Gly	ttc Phe 1260	gtg Val	ggt Gly	gag Glu	3789
cgc Arg	tgt Cys 1265	gag Glu	ggg Gly	gat Asp	gtc Val	aac Asn 1270	gag Glu	tgc Cys	ctg Leu	tcc Ser	aat Asn 1275	ccc Pro	tgc Cys	gac Asp	3834

212583.ST25															
gcc Ala	cgt Arg 1280	ggc Gly	acc Thr	cag Gln	aac Asn	tgc Cys 1285	gtg Val	cag Gln	cgc Arg	gtc Val	aat Asn 1290	gac Asp	ttc Phe	cac His	3879
tgc Cys	gag Glu 1295	tgc Cys	cgt Arg	gct Ala	ggt Gly	cac His 1300	acc Thr	ggg Gly	cgc Arg	cgc Arg	tgc Cys 1305	gag Glu	tcc Ser	gtc Val	3924
atc Ile	aat Asn 1310	ggc Gly	tgc Cys	aaa Lys	ggc Gly	aag Lys 1315	ccc Pro	tgc Cys	aag Lys	aat Asn	ggg Gly 1320	ggc Gly	acc Thr	tgc Cys	3969
gcc Ala	gtg Val 1325	gcc Ala	tcc Ser	aac Asn	acc Thr	gcc Ala 1330	cgc Arg	ggg Gly	ttc Phe	atc Ile	tgc Cys 1335	aag Lys	tgc Cys	cct Pro	4014
gcg Ala	ggc Gly 1340	ttc Phe	gag Glu	ggc Gly	gcc Ala	acg Thr 1345	tgt Cys	gag Glu	aat Asn	gac Asp	gct Ala 1350	cgt Arg	acc Thr	tgc Cys	4059
ggc Gly	agc Ser 1355	ctg Leu	cgc Arg	tgc Cys	ctc Leu	aac Asn 1360	ggc Gly	ggc Gly	aca Thr	tgc Cys	atc Ile 1365	tcc Ser	ggc Gly	ccg Pro	4104
cgc Arg	agc Ser 1370	ccc Pro	acc Thr	tgc Cys	ctg Leu	tgc Cys 1375	ctg Leu	ggc Gly	ccc Pro	ttc Phe	acg Thr 1380	ggc Gly	ccc Pro	gaa Glu	4149
tgc Cys	cag Gln 1385	ttc Phe	ccg Pro	gcc Ala	agc Ser	agc Ser 1390	ccc Pro	tgc Cys	ctg Leu	ggc Gly	ggc Gly 1395	aac Asn	ccc Pro	tgc Cys	4194
tac Tyr	aac Asn 1400	cag Gln	ggg Gly	acc Thr	tgt Cys	gag Glu 1405	ccc Pro	aca Thr	tcc Ser	gag Glu	agc Ser 1410	ccc Pro	ttc Phe	tac Tyr	4239
cgt Arg	tgc Cys 1415	ctg Leu	tgc Cys	ccc Pro	gcc Ala	aaa Lys 1420	ttc Phe	aac Asn	ggg Gly	ctc Leu	ttg Leu 1425	tgc Cys	cac His	atc Ile	4284
ctg Leu	gac Asp 1430	tac Tyr	agc Ser	ttc Phe	ggg Gly	ggt Gly 1435	ggg Gly	gcc Ala	ggg Gly	cgc Arg	gac Asp 1440	atc Ile	ccc Pro	ccg Pro	4329
ccg Pro	ctg Leu 1445	atc Ile	gag Glu	gag Glu	gcg Ala	tgc Cys 1450	gag Glu	ctg Leu	ccc Pro	gag Glu	tgc Cys 1455	cag Gln	gag Glu	gac Asp	4374
gcg Ala	ggc Gly 1460	aac Asn	aag Lys	gtc Val	tgc Cys	agc Ser 1465	ctg Leu	cag Gln	tgc Cys	aac Asn	aac Asn 1470	cac His	gcg Ala	tgc Cys	4419
ggc Gly	tgg Trp 1475	gac Asp	ggc Gly	ggt Gly	gac Asp	tgc Cys 1480	tcc Ser	ctc Leu	aac Asn	ttc Phe	aat Asn 1485	gac Asp	ccc Pro	tgg Trp	4464
aag Lys	aac Asn 1490	tgc Cys	acg Thr	cag Gln	tct Ser	ctg Leu 1495	cag Gln	tgc Cys	tgg Trp	aag Lys	tac Tyr 1500	ttc Phe	agt Ser	gac Asp	4509
ggc Gly	cac His 1505	tgt Cys	gac Asp	agc Ser	cag Gln	tgc Cys 1510	aac Asn	tca Ser	gcc Ala	ggc Gly	tgc Cys 1515	ctc Leu	ttc Phe	gac Asp	4554
ggc Gly	ttt Phe 1520	gac Asp	tgc Cys	cag Gln	cgt Arg	gcg Ala 1525	gaa Glu	ggc Gly	cag Gln	tgc Cys	aac Asn 1530	ccc Pro	ctg Leu	tac Tyr	4599

[illegible]

Page 8



212583.ST25															
ggc Gly	gag Glu 1790	gac Asp	tcc Ser	gtg Val	ggc Gly	ctc Leu 1795	aag Lys	ccc Pro	ctg Leu	aag Lys	aac Asn 1800	gct Ala	tca Ser	gac Asp	5409
ggt Gly	gcc Ala 1805	ctc Leu	atg Met	gac Asp	gac Asp	aac Asn 1810	cag Gln	aat Asn	gag Glu	tgg Trp	ggg Gly 1815	gac Asp	gag Glu	gac Asp	5454
ctg Leu	gag Glu 1820	acc Thr	aag Lys	aag Lys	ttc Phe	cgg Arg 1825	ttc Phe	gag Glu	gag Glu	ccc Pro	gtg Val 1830	ggt Val	ctg Leu	cct Pro	5499
gac Asp	ctg Leu 1835	gac Asp	gac Asp	cag Gln	aca Thr	gac Asp 1840	cac His	cgg Arg	cag Gln	tgg Trp	act Thr 1845	cag Gln	cag Gln	cac His	5544
ctg Leu	gat Asp 1850	gcc Ala	gct Ala	gac Asp	ctg Leu	cgc Arg 1855	atg Met	tct Ser	gcc Ala	atg Met	gcc Ala 1860	ccc Pro	aca Thr	ccg Pro	5589
ccc Pro	cag Gln 1865	ggt Gly	gag Glu	gtt Val	gac Asp	gcc Ala 1870	gac Asp	tgc Cys	atg Met	gac Asp	gtc Val 1875	aat Asn	gtc Val	cgc Arg	5634
ggg Gly	cct Pro 1880	gat Asp	ggc Gly	ttc Phe	acc Thr	ccg Pro 1885	ctc Leu	atg Met	atc Ile	gcc Ala	tcc Ser 1890	tgc Cys	agc Ser	ggg Gly	5679
ggc Gly	ggc Gly 1895	ctg Leu	gag Glu	acg Thr	ggc Gly	aac Asn 1900	agc Ser	gag Glu	gaa Glu	gag Glu	gag Glu 1905	gac Asp	gcg Ala	ccg Pro	5724
gcc Ala	gtc Val 1910	atc Ile	tcc Ser	gac Asp	ttc Phe	atc Ile 1915	tac Tyr	cag Gln	ggc Gly	gcc Ala	agc Ser 1920	ctg Leu	cac His	aac Asn	5769
cag Gln	aca Thr 1925	gac Asp	cgc Arg	acg Thr	ggc Gly	gag Glu 1930	acc Thr	gcc Ala	ttg Leu	cac His	ctg Leu 1935	gcc Ala	gcc Ala	cgc Arg	5814
tac Tyr	tca Ser 1940	cgc Arg	tct Ser	gat Asp	gcc Ala	gcc Ala 1945	aag Lys	cgc Arg	ctg Leu	ctg Leu	gag Glu 1950	gcc Ala	agc Ser	gca Ala	5859
gat Asp	gcc Ala 1955	aac Asn	atc Ile	cag Gln	gac Asp	aac Asn 1960	atg Met	ggc Gly	cgc Arg	acc Thr	ccg Pro 1965	ctg Leu	cat His	gcg Ala	5904
gct Ala	gtg Val 1970	tct Ser	gcc Ala	gac Asp	gca Ala	caa Gln 1975	ggt Gly	gtc Val	ttc Phe	cag Gln	atc Ile 1980	ctg Leu	atc Ile	cgg Arg	5949
aac Asn	cga Arg 1985	gcc Ala	aca Thr	gac Asp	ctg Leu	gat Asp 1990	gcc Ala	cgc Arg	atg Met	cat His	gat Asp 1995	ggc Gly	acg Thr	acg Thr	5994
cca Pro	ctg Leu 2000	atc Ile	ctg Leu	gct Ala	gcc Ala	cgc Arg 2005	ctg Leu	gcc Ala	gtg Val	gag Glu	ggc Gly 2010	atg Met	ctg Leu	gag Glu	6039
gac Asp	ctc Leu 2015	atc Ile	aac Asn	tca Ser	cac His	gcc Ala 2020	gac Asp	gtc Val	aac Asn	gcc Ala	gta Val 2025	gat Asp	gac Asp	ctg Leu	6084
ggc Gly	aag Lys 2030	tcc Ser	gcc Ala	ctg Leu	cac His	tgg Trp 2035	gcc Ala	gcc Ala	gcc Ala	gtg Val	aac Asn 2040	aat Asn	gtg Val	gat Asp	6129

212583.ST25															
gcc Ala	gca Ala 2045	gtt Val	gtg Val	ctc Leu	ctg Leu	aag Lys 2050	aac Asn	ggg Gly	gct Ala	aac Asn	aaa Lys 2055	gat Asp	atg Met	cag Gln	6174
aac Asn	aac Asn 2060	agg Arg	gag Glu	gag Glu	aca Thr	ccc Pro 2065	ctg Leu	ttt Phe	ctg Leu	gcc Ala	gcc Ala 2070	cgg Arg	gag Glu	ggc Gly	6219
agc Ser	tac Tyr 2075	gag Glu	acc Thr	gcc Ala	aag Lys	gtg Val 2080	ctg Leu	ctg Leu	gac Asp	cac His	ttt Phe 2085	gcc Ala	aac Asn	cgg Arg	6264
gac Asp	atc Ile 2090	acg Thr	gat Asp	cat His	atg Met	gac Asp 2095	cgc Arg	ctg Leu	ccg Pro	cgc Arg	gac Asp 2100	atc Ile	gca Ala	cag Gln	6309
gag Glu	cgc Arg 2105	atg Met	cat His	cac His	gac Asp	atc Ile 2110	gtg Val	agg Arg	ctg Leu	ctg Leu	gac Asp 2115	gag Glu	tac Tyr	aac Asn	6354
ctg Leu	gtg Val 2120	cgc Arg	agc Ser	ccg Pro	cag Gln	ctg Leu 2125	cac His	gga Gly	gcc Ala	ccg Pro	ctg Leu 2130	ggg Gly	ggc Gly	acg Thr	6399
ccc Pro	acc Thr 2135	ctg Leu	tcg Ser	ccc Pro	ccg Pro	ctc Leu 2140	tgc Cys	tcg Ser	ccc Pro	aac Asn	ggc Gly 2145	tac Tyr	ctg Leu	ggc Gly	6444
agc Ser	ctc Leu 2150	aag Lys	ccc Pro	ggc Gly	gtg Val	cag Gln 2155	ggc Gly	aag Lys	aag Lys	gtc Val	cgc Arg 2160	aag Lys	ccc Pro	agc Ser	6489
agc Ser	aaa Lys 2165	ggc Gly	ctg Leu	gcc Ala	tgt Cys	gga Gly 2170	agc Ser	aag Lys	gag Glu	gcc Ala	aag Lys 2175	gac Asp	ctc Leu	aag Lys	6534
gca Ala	cgg Arg 2180	agg Arg	aag Lys	aag Lys	tcc Ser	cag Gln 2185	gay Asp	ggc Gly	aag Lys	ggc Gly	tgc Cys 2190	ctg Leu	ctg Leu	gac Asp	6579
agc Ser	tcc Ser 2195	ggc Gly	atg Met	ctc Leu	tcg Ser	ccc Pro 2200	gtg Val	gac Asp	tcc Ser	ctg Leu	gag Glu 2205	tca Ser	ccc Pro	cat His	6624
ggc Gly	tac Tyr 2210	ctg Leu	tca Ser	gac Asp	gtg Val	gcc Ala 2215	tcg Ser	ccg Pro	cca Pro	ctg Leu	ctg Leu 2220	ccc Pro	tcc Ser	ccg Pro	6669
ttc Phe	cag Gln 2225	cag Gln	tct Ser	ccg Pro	tcc Ser	gtg Val 2230	ccc Pro	ctc Leu	aac Asn	cac His	ctg Leu 2235	cct Pro	ggg Gly	atg Met	6714
ccc Pro	gac Asp 2240	acc Thr	cac His	ctg Leu	ggc Gly	atc Ile 2245	ggg Gly	cac His	ctg Leu	aac Asn	gtg Val 2250	gcg Ala	gcc Ala	aag Lys	6759
ccc Pro	gag Glu 2255	atg Met	gcg Ala	gcg Ala	ctg Leu	ggt Gly 2260	ggg Gly	ggc Gly	ggc Gly	cgg Arg	ctg Leu 2265	gcc Ala	ttt Phe	gag Glu	6804
act Thr	ggc Gly 2270	cca Pro	cct Pro	cgt Arg	ctc Leu	tcc Ser 2275	cac His	ctg Leu	cct Pro	gtg Val	gcc Ala 2280	tct Ser	ggc Gly	acc Thr	6849
agc Ser	acc Thr 2285	gtc Val	ctg Leu	ggc Gly	tcc Ser	agc Ser 2290	agc Ser	gga Gly	ggg Gly	gcc Ala	ctg Leu 2295	aat Asn	ttc Phe	act Thr	6894

212583.ST25

gtg	ggc	ggg	tcc	acc	agt	ttg	aat	ggt	caa	tgc	gag	tgg	ctg	tcc	6939
Val	Gly	Gly	Ser	Thr	Ser	Leu	Asn	Gly	Gln	Cys	Glu	Trp	Leu	Ser	
	2300					2305					2310				
cgg	ctg	cag	agc	ggc	atg	gtg	ccg	aac	caa	tac	aac	cct	ctg	cgg	6984
Arg	Leu	Gln	Ser	Gly	Met	Val	Pro	Asn	Gln	Tyr	Asn	Pro	Leu	Arg	
	2315					2320					2325				
ggg	agt	gtg	gca	cca	ggc	ccc	ctg	agc	aca	cag	gcc	ccc	tcc	ctg	7029
Gly	Ser	Val	Ala	Pro	Gly	Pro	Leu	Ser	Thr	Gln	Ala	Pro	Ser	Leu	
	2330					2335					2340				
cag	cat	ggc	atg	gta	ggc	ccg	ctg	cac	agt	agc	ctt	gct	gcc	agc	7074
Gln	His	Gly	Met	Val	Gly	Pro	Leu	His	Ser	Ser	Leu	Ala	Ala	Ser	
	2345					2350					2355				
gcc	ctg	tcc	cag	atg	atg	agc	tac	cag	ggc	ctg	ccc	agc	acc	cgg	7119
Ala	Leu	Ser	Gln	Met	Met	Ser	Tyr	Gln	Gly	Leu	Pro	Ser	Thr	Arg	
	2360					2365					2370				
ctg	gcc	acc	cag	cct	cac	ctg	gtg	cag	acc	cag	cag	gtg	cag	cca	7164
Leu	Ala	Thr	Gln	Pro	His	Leu	Val	Gln	Thr	Gln	Gln	Val	Gln	Pro	
	2375					2380					2385				
caa	aac	tta	cag	atg	cag	cag	cag	aac	ctg	cag	cca	gca	aac	atc	7209
Gln	Asn	Leu	Gln	Met	Gln	Gln	Gln	Asn	Leu	Gln	Pro	Ala	Asn	Ile	
	2390					2395					2400				
cag	cag	cag	caa	agc	ctg	cag	ccg	cca	cca	cca	cca	cca	cag	ccg	7254
Gln	Gln	Gln	Gln	Ser	Leu	Gln	Pro	Pro	Pro	Pro	Pro	Pro	Gln	Pro	
	2405					2410					2415				
cac	ctt	ggc	gtg	agc	tca	gca	gcc	agc	ggc	cac	ctg	ggc	cgg	agc	7299
His	Leu	Gly	Val	Ser	Ser	Ala	Ala	Ser	Gly	His	Leu	Gly	Arg	Ser	
	2420					2425					2430				
ttc	ctg	agt	gga	gag	ccg	agc	cag	gca	gac	gtg					7332
Phe	Leu	Ser	Gly	Glu	Pro	Ser	Gln	Ala	Asp	Val					
	2435					2440									

<210> 2

<211> 2444

<212> PRT

<213> Artificial Sequence

<220>

<221> misc\_feature

<222> (891)..(891)

<223> The 'Xaa' at location 891 stands for Gly, or Ala.

<220>

<221> misc\_feature

<222> (1763)..(1763)

<223> The 'Xaa' at location 1763 stands for Gln, Arg, Pro, or Leu.

<220>

&lt;221&gt; misc\_feature

&lt;222&gt; (1787)..(1787)

&lt;223&gt; The 'Xaa' at location 1787 stands for Thr, Ala, Pro, or Ser.

&lt;220&gt;

&lt;223&gt; Constitutively Active Notch-1

&lt;400&gt; 2

Met Pro Pro Leu Leu Ala Pro Leu Leu Cys Leu Ala Leu Leu Pro Ala  
 1 5 10 15

Leu Ala Ala Arg Gly Pro Arg Cys Ser Gln Pro Gly Glu Thr Cys Leu  
 20 25 30

Asn Gly Gly Lys Cys Glu Ala Ala Asn Gly Thr Glu Ala Cys Val Cys  
 35 40 45

Gly Gly Ala Phe Val Gly Pro Arg Cys Gln Asp Pro Asn Pro Cys Leu  
 50 55 60

Ser Thr Pro Cys Lys Asn Ala Gly Thr Cys His Val Val Asp Arg Arg  
 65 70 75 80

Gly Val Ala Asp Tyr Ala Cys Ser Cys Ala Leu Gly Phe Ser Gly Pro  
 85 90 95

Leu Cys Leu Thr Pro Leu Asp Asn Ala Cys Leu Thr Asn Pro Cys Arg  
 100 105 110

Asn Gly Gly Thr Cys Asp Leu Leu Thr Leu Thr Glu Tyr Lys Cys Arg  
 115 120 125

Cys Pro Pro Gly Trp Ser Gly Lys Ser Cys Gln Gln Ala Asp Pro Cys  
 130 135 140

Ala Ser Asn Pro Cys Ala Asn Gly Gly Gln Cys Leu Pro Phe Glu Ala  
 145 150 155 160

Ser Tyr Ile Cys His Cys Pro Pro Ser Phe His Gly Pro Thr Cys Arg  
 165 170 175

Gln Asp Val Asn Glu Cys Gly Gln Lys Pro Arg Leu Cys Arg His Gly  
 180 185 190

Gly Thr Cys His Asn Glu Val Gly Ser Tyr Arg Cys Val Cys Arg Ala  
 195 200 205

Thr His Thr Gly Pro Asn Cys Glu Arg Pro Tyr Val Pro Cys Ser Pro  
 210 215 220

## 212583.ST25

Ser Pro Cys Gln Asn Gly Gly Thr Cys Arg Pro Thr Gly Asp Val Thr  
225 230 235 240

His Glu Cys Ala Cys Leu Pro Gly Phe Thr Gly Gln Asn Cys Glu Glu  
245 250 255

Asn Ile Asp Asp Cys Pro Gly Asn Asn Cys Lys Asn Gly Gly Ala Cys  
260 265 270

Val Asp Gly Val Asn Thr Tyr Asn Cys Pro Cys Pro Pro Glu Trp Thr  
275 280 285

Gly Gln Tyr Cys Thr Glu Asp Val Asp Glu Cys Gln Leu Met Pro Asn  
290 295 300

Ala Cys Gln Asn Gly Gly Thr Cys His Asn Thr His Gly Gly Tyr Asn  
305 310 315 320

Cys Val Cys Val Asn Gly Trp Thr Gly Glu Asp Cys Ser Glu Asn Ile  
325 330 335

Asp Asp Cys Ala Ser Ala Ala Cys Phe His Gly Ala Thr Cys His Asp  
340 345 350

Arg Val Ala Ser Phe Tyr Cys Glu Cys Pro His Gly Arg Thr Gly Leu  
355 360 365

Leu Cys His Leu Asn Asp Ala Cys Ile Ser Asn Pro Cys Asn Glu Gly  
370 375 380

Ser Asn Cys Asp Thr Asn Pro Val Asn Gly Lys Ala Ile Cys Thr Cys  
385 390 395 400

Pro Ser Gly Tyr Thr Gly Pro Ala Cys Ser Gln Asp Val Asp Glu Cys  
405 410 415

Ser Leu Gly Ala Asn Pro Cys Glu His Ala Gly Lys Cys Ile Asn Thr  
420 425 430

Leu Gly Ser Phe Glu Cys Gln Cys Leu Gln Gly Tyr Thr Gly Pro Arg  
435 440 445

Cys Glu Ile Asp Val Asn Glu Cys Val Ser Asn Pro Cys Gln Asn Asp  
450 455 460

Ala Thr Cys Leu Asp Gln Ile Gly Glu Phe Gln Cys Met Cys Met Pro  
465 470 475 480

Gly Tyr Glu Gly Val His Cys Glu Val Asn Thr Asp Glu Cys Ala Ser  
485 490 495

## 212583.ST25

Ser Pro Cys Leu His Asn Gly Arg Cys Leu Asp Lys Ile Asn Glu Phe  
500 505 510

Gln Cys Glu Cys Pro Thr Gly Phe Thr Gly His Leu Cys Gln Tyr Asp  
515 520 525

Val Asp Glu Cys Ala Ser Thr Pro Cys Lys Asn Gly Ala Lys Cys Leu  
530 535 540

Asp Gly Pro Asn Thr Tyr Thr Cys Val Cys Thr Glu Gly Tyr Thr Gly  
545 550 555 560

Thr His Cys Glu Val Asp Ile Asp Glu Cys Asp Pro Asp Pro Cys His  
565 570 575

Tyr Gly Ser Cys Lys Asp Gly Val Ala Thr Phe Thr Cys Leu Cys Arg  
580 585 590

Pro Gly Tyr Thr Gly His His Cys Glu Thr Asn Ile Asn Glu Cys Ser  
595 600 605

Ser Gln Pro Cys Arg Leu Arg Gly Thr Cys Gln Asp Pro Asp Asn Ala  
610 615 620

Tyr Leu Cys Phe Cys Leu Lys Gly Thr Thr Gly Pro Asn Cys Glu Ile  
625 630 635 640

Asn Leu Asp Asp Cys Ala Ser Ser Pro Cys Asp Ser Gly Thr Cys Leu  
645 650 655

Asp Lys Ile Asp Gly Tyr Glu Cys Ala Cys Glu Pro Gly Tyr Thr Gly  
660 665 670

Ser Met Cys Asn Ser Asn Ile Asp Glu Cys Ala Gly Asn Pro Cys His  
675 680 685

Asn Gly Gly Thr Cys Glu Asp Gly Ile Asn Gly Phe Thr Cys Arg Cys  
690 695 700

Pro Glu Gly Tyr His Asp Pro Thr Cys Leu Ser Glu Val Asn Glu Cys  
705 710 715 720

Asn Ser Asn Pro Cys Val His Gly Ala Cys Arg Asp Ser Leu Asn Gly  
725 730 735

Tyr Lys Cys Asp Cys Asp Pro Gly Trp Ser Gly Thr Asn Cys Asp Ile  
740 745 750

Asn Asn Asn Glu Cys Glu Ser Asn Pro Cys Val Asn Gly Gly Thr Cys  
755 760 765

## 212583.ST25

Lys Asp Met Thr Ser Gly Ile Val Cys Thr Cys Arg Glu Gly Phe Ser  
770 775 780

Gly Pro Asn Cys Gln Thr Asn Ile Asn Glu Cys Ala Ser Asn Pro Cys  
785 790 795 800

Leu Asn Lys Gly Thr Cys Ile Asp Asp Val Ala Gly Tyr Lys Cys Asn  
805 810 815

Cys Leu Leu Pro Tyr Thr Gly Ala Thr Cys Glu Val Val Leu Ala Pro  
820 825 830

Cys Ala Pro Ser Pro Cys Arg Asn Gly Gly Glu Cys Arg Gln Ser Glu  
835 840 845

Asp Tyr Glu Ser Phe Ser Cys Val Cys Pro Thr Ala Gly Ala Lys Gly  
850 855 860

Gln Thr Cys Glu Val Asp Ile Asn Glu Cys Val Leu Ser Pro Cys Arg  
865 870 875 880

His Gly Ala Ser Cys Gln Asn Thr His Gly Xaa Tyr Arg Cys His Cys  
885 890 895

Gln Ala Gly Tyr Ser Gly Arg Asn Cys Glu Thr Asp Ile Asp Asp Cys  
900 905 910

Arg Pro Asn Pro Cys His Asn Gly Gly Ser Cys Thr Asp Gly Ile Asn  
915 920 925

Thr Ala Phe Cys Asp Cys Leu Pro Gly Phe Arg Gly Thr Phe Cys Glu  
930 935 940

Glu Asp Ile Asn Glu Cys Ala Ser Asp Pro Cys Arg Asn Gly Ala Asn  
945 950 955 960

Cys Thr Asp Cys Val Asp Ser Tyr Thr Cys Thr Cys Pro Ala Gly Phe  
965 970 975

Ser Gly Ile His Cys Glu Asn Asn Thr Pro Asp Cys Thr Glu Ser Ser  
980 985 990

Cys Phe Asn Gly Gly Thr Cys Val Asp Gly Ile Asn Ser Phe Thr Cys  
995 1000 1005

Leu Cys Pro Pro Gly Phe Thr Gly Ser Tyr Cys Gln His Val Val  
1010 1015 1020

Asn Glu Cys Asp Ser Arg Pro Cys Leu Leu Gly Gly Thr Cys Gln  
1025 1030 1035

## 212583.ST25

Asp Gly Arg Gly Leu His Arg Cys Thr Cys Pro Gln Gly Tyr Thr  
 1040 1045 1050  
 Gly Pro Asn Cys Gln Asn Leu Val His Trp Cys Asp Ser Ser Pro  
 1055 1060 1065  
 Cys Lys Asn Gly Gly Lys Cys Trp Gln Thr His Thr Gln Tyr Arg  
 1070 1075 1080  
 Cys Glu Cys Pro Ser Gly Trp Thr Gly Leu Tyr Cys Asp Val Pro  
 1085 1090 1095  
 Ser Val Ser Cys Glu Val Ala Ala Gln Arg Gln Gly Val Asp Val  
 1100 1105 1110  
 Ala Arg Leu Cys Gln His Gly Gly Leu Cys Val Asp Ala Gly Asn  
 1115 1120 1125  
 Thr His His Cys Arg Cys Gln Ala Gly Tyr Thr Gly Ser Tyr Cys  
 1130 1135 1140  
 Glu Asp Leu Val Asp Glu Cys Ser Pro Ser Pro Cys Gln Asn Gly  
 1145 1150 1155  
 Ala Thr Cys Thr Asp Tyr Leu Gly Gly Tyr Ser Cys Lys Cys Val  
 1160 1165 1170  
 Ala Gly Tyr His Gly Val Asn Cys Ser Glu Glu Ile Asp Glu Cys  
 1175 1180 1185  
 Leu Ser His Pro Cys Gln Asn Gly Gly Thr Cys Leu Asp Leu Pro  
 1190 1195 1200  
 Asn Thr Tyr Lys Cys Ser Cys Pro Arg Gly Thr Gln Gly Val His  
 1205 1210 1215  
 Cys Glu Ile Asn Val Asp Asp Cys Asn Pro Pro Val Asp Pro Val  
 1220 1225 1230  
 Ser Arg Ser Pro Lys Cys Phe Asn Asn Gly Thr Cys Val Asp Gln  
 1235 1240 1245  
 Val Gly Gly Tyr Ser Cys Thr Cys Pro Pro Gly Phe Val Gly Glu  
 1250 1255 1260  
 Arg Cys Glu Gly Asp Val Asn Glu Cys Leu Ser Asn Pro Cys Asp  
 1265 1270 1275  
 Ala Arg Gly Thr Gln Asn Cys Val Gln Arg Val Asn Asp Phe His  
 1280 1285 1290



Table 1. (continued)	
Variable	Mean (SD)
Age (years)	30.5 (10.5)
Gender	
Male	100 (100%)
Female	0 (0%)
Marital status	
Married	100 (100%)
Single	0 (0%)
Divorced	0 (0%)
Widowed	0 (0%)
Education (years)	12.5 (2.5)
Occupation	
Student	100 (100%)
Teacher	0 (0%)
Engineer	0 (0%)
Doctor	0 (0%)
Nurse	0 (0%)
Other	0 (0%)
Religion	
Muslim	100 (100%)
Christian	0 (0%)
Hindu	0 (0%)
Buddhist	0 (0%)
Jain	0 (0%)
Sikh	0 (0%)
Other	0 (0%)
Family size	4.5 (1.5)
Income (USD/month)	100 (100%)
Health status	
Good	100 (100%)
Poor	0 (0%)
Unknown	0 (0%)
Smoking status	
Smoker	100 (100%)
Non-smoker	0 (0%)
Unknown	0 (0%)
Alcohol consumption	
Drinker	100 (100%)
Non-drinker	0 (0%)
Unknown	0 (0%)
Exercise frequency	
Regular	100 (100%)
Irregular	0 (0%)
Unknown	0 (0%)
Stress level	
High	100 (100%)
Low	0 (0%)
Unknown	0 (0%)
Depression score	10.5 (5.5)
Anxiety score	10.5 (5.5)
Life satisfaction score	10.5 (5.5)
Quality of life score	10.5 (5.5)
Overall health score	10.5 (5.5)

Asp Gln Tyr Cys Lys Asp His Phe Ser Asp Gly His Cys Asp Gln  
1535 1540 1545

## 212583.ST25

Gly Cys Asn Ser Ala Glu Cys Glu Trp Asp Gly Leu Asp Cys Ala  
 1550 1555 1560  
 Glu His Val Pro Glu Arg Leu Ala Ala Gly Thr Leu Val Val Val  
 1565 1570 1575  
 Val Leu Met Pro Pro Glu Gln Leu Arg Asn Ser Ser Phe His Phe  
 1580 1585 1590  
 Leu Arg Glu Leu Ser Arg Val Leu His Thr Asn Val Val Phe Lys  
 1595 1600 1605  
 Arg Asp Ala His Gly Gln Gln Met Ile Phe Pro Tyr Tyr Gly Arg  
 1610 1615 1620  
 Glu Glu Glu Leu Arg Lys His Pro Ile Lys Arg Ala Ala Glu Gly  
 1625 1630 1635  
 Trp Ala Ala Pro Asp Ala Leu Leu Gly Gln Val Lys Ala Ser Leu  
 1640 1645 1650  
 Leu Pro Gly Gly Ser Glu Gly Gly Arg Arg Arg Arg Glu Leu Asp  
 1655 1660 1665  
 Pro Met Asp Val Arg Gly Ser Ile Val Tyr Leu Glu Ile Asp Asn  
 1670 1675 1680  
 Arg Gln Cys Val Gln Ala Ser Ser Gln Cys Phe Gln Ser Ala Thr  
 1685 1690 1695  
 Asp Val Ala Ala Phe Leu Gly Ala Leu Ala Ser Leu Gly Ser Leu  
 1700 1705 1710  
 Asn Ile Pro Tyr Lys Ile Glu Ala Val Gln Ser Glu Thr Val Glu  
 1715 1720 1725  
 Pro Pro Pro Pro Ala Gln Leu His Phe Met Tyr Val Ala Ala Ala  
 1730 1735 1740  
 Ala Phe Val Leu Leu Phe Phe Val Gly Cys Gly Val Leu Leu Ser  
 1745 1750 1755  
 Arg Lys Arg Arg Xaa Gln His Gly Gln Leu Trp Phe Pro Glu Gly  
 1760 1765 1770  
 Phe Lys Val Ser Glu Ala Ser Lys Lys Lys Arg Arg Glu Xaa Leu  
 1775 1780 1785  
 Gly Glu Asp Ser Val Gly Leu Lys Pro Leu Lys Asn Ala Ser Asp  
 1790 1795 1800

## 212583.ST25

Gly Ala Leu Met Asp Asp Asn Gln Asn Glu Trp Gly Asp Glu Asp  
 1805 1810 1815  
 Leu Glu Thr Lys Lys Phe Arg Phe Glu Glu Pro Val Val Leu Pro  
 1820 1825 1830  
 Asp Leu Asp Asp Gln Thr Asp His Arg Gln Trp Thr Gln Gln His  
 1835 1840 1845  
 Leu Asp Ala Ala Asp Leu Arg Met Ser Ala Met Ala Pro Thr Pro  
 1850 1855 1860  
 Pro Gln Gly Glu Val Asp Ala Asp Cys Met Asp Val Asn Val Arg  
 1865 1870 1875  
 Gly Pro Asp Gly Phe Thr Pro Leu Met Ile Ala Ser Cys Ser Gly  
 1880 1885 1890  
 Gly Gly Leu Glu Thr Gly Asn Ser Glu Glu Glu Glu Asp Ala Pro  
 1895 1900 1905  
 Ala Val Ile Ser Asp Phe Ile Tyr Gln Gly Ala Ser Leu His Asn  
 1910 1915 1920  
 Gln Thr Asp Arg Thr Gly Glu Thr Ala Leu His Leu Ala Ala Arg  
 1925 1930 1935  
 Tyr Ser Arg Ser Asp Ala Ala Lys Arg Leu Leu Glu Ala Ser Ala  
 1940 1945 1950  
 Asp Ala Asn Ile Gln Asp Asn Met Gly Arg Thr Pro Leu His Ala  
 1955 1960 1965  
 Ala Val Ser Ala Asp Ala Gln Gly Val Phe Gln Ile Leu Ile Arg  
 1970 1975 1980  
 Asn Arg Ala Thr Asp Leu Asp Ala Arg Met His Asp Gly Thr Thr  
 1985 1990 1995  
 Pro Leu Ile Leu Ala Ala Arg Leu Ala Val Glu Gly Met Leu Glu  
 2000 2005 2010  
 Asp Leu Ile Asn Ser His Ala Asp Val Asn Ala Val Asp Asp Leu  
 2015 2020 2025  
 Gly Lys Ser Ala Leu His Trp Ala Ala Ala Val Asn Asn Val Asp  
 2030 2035 2040  
 Ala Ala Val Val Leu Leu Lys Asn Gly Ala Asn Lys Asp Met Gln  
 2045 2050 2055

## 212583.ST25

Asn	Asn	Arg	Glu	Glu	Thr	Pro	Leu	Phe	Leu	Ala	Ala	Arg	Glu	Gly
	2060					2065					2070			
Ser	Tyr	Glu	Thr	Ala	Lys	Val	Leu	Leu	Asp	His	Phe	Ala	Asn	Arg
	2075					2080					2085			
Asp	Ile	Thr	Asp	His	Met	Asp	Arg	Leu	Pro	Arg	Asp	Ile	Ala	Gln
	2090					2095					2100			
Glu	Arg	Met	His	His	Asp	Ile	Val	Arg	Leu	Leu	Asp	Glu	Tyr	Asn
	2105					2110					2115			
Leu	Val	Arg	Ser	Pro	Gln	Leu	His	Gly	Ala	Pro	Leu	Gly	Gly	Thr
	2120					2125					2130			
Pro	Thr	Leu	Ser	Pro	Pro	Leu	Cys	Ser	Pro	Asn	Gly	Tyr	Leu	Gly
	2135					2140					2145			
Ser	Leu	Lys	Pro	Gly	Val	Gln	Gly	Lys	Lys	Val	Arg	Lys	Pro	Ser
	2150					2155					2160			
Ser	Lys	Gly	Leu	Ala	Cys	Gly	Ser	Lys	Glu	Ala	Lys	Asp	Leu	Lys
	2165					2170					2175			
Ala	Arg	Arg	Lys	Lys	Ser	Gln	Asp	Gly	Lys	Gly	Cys	Leu	Leu	Asp
	2180					2185					2190			
Ser	Ser	Gly	Met	Leu	Ser	Pro	Val	Asp	Ser	Leu	Glu	Ser	Pro	His
	2195					2200					2205			
Gly	Tyr	Leu	Ser	Asp	Val	Ala	Ser	Pro	Pro	Leu	Leu	Pro	Ser	Pro
	2210					2215					2220			
Phe	Gln	Gln	Ser	Pro	Ser	Val	Pro	Leu	Asn	His	Leu	Pro	Gly	Met
	2225					2230					2235			
Pro	Asp	Thr	His	Leu	Gly	Ile	Gly	His	Leu	Asn	Val	Ala	Ala	Lys
	2240					2245					2250			
Pro	Glu	Met	Ala	Ala	Leu	Gly	Gly	Gly	Gly	Arg	Leu	Ala	Phe	Glu
	2255					2260					2265			
Thr	Gly	Pro	Pro	Arg	Leu	Ser	His	Leu	Pro	Val	Ala	Ser	Gly	Thr
	2270					2275					2280			
Ser	Thr	Val	Leu	Gly	Ser	Ser	Ser	Gly	Gly	Ala	Leu	Asn	Phe	Thr
	2285					2290					2295			
Val	Gly	Gly	Ser	Thr	Ser	Leu	Asn	Gly	Gln	Cys	Glu	Trp	Leu	Ser
	2300					2305					2310			

## 212583.ST25

Arg Leu Gln Ser Gly Met Val Pro Asn Gln Tyr Asn Pro Leu Arg  
2315 2320 2325

Gly Ser Val Ala Pro Gly Pro Leu Ser Thr Gln Ala Pro Ser Leu  
2330 2335 2340

Gln His Gly Met Val Gly Pro Leu His Ser Ser Leu Ala Ala Ser  
2345 2350 2355

Ala Leu Ser Gln Met Met Ser Tyr Gln Gly Leu Pro Ser Thr Arg  
2360 2365 2370

Leu Ala Thr Gln Pro His Leu Val Gln Thr Gln Gln Val Gln Pro  
2375 2380 2385

Gln Asn Leu Gln Met Gln Gln Gln Asn Leu Gln Pro Ala Asn Ile  
2390 2395 2400

Gln Gln Gln Gln Ser Leu Gln Pro Pro Pro Pro Pro Pro Gln Pro  
2405 2410 2415

His Leu Gly Val Ser Ser Ala Ala Ser Gly His Leu Gly Arg Ser  
2420 2425 2430

Phe Leu Ser Gly Glu Pro Ser Gln Ala Asp Val  
2435 2440

<210> 3

<211> 1218

<212> PRT

<213> Homo sapiens

<400> 3

Met Arg Ser Pro Arg Thr Arg Gly Arg Ser Gly Arg Pro Leu Ser Leu  
1 5 10 15

Leu Leu Ala Leu Leu Cys Ala Leu Arg Ala Lys Val Cys Gly Ala Ser  
20 25 30

Gly Gln Phe Glu Leu Glu Ile Leu Ser Met Gln Asn Val Asn Gly Glu  
35 40 45

Leu Gln Asn Gly Asn Cys Cys Gly Gly Ala Arg Asn Pro Gly Asp Arg  
50 55 60

Lys Cys Thr Arg Asp Glu Cys Asp Thr Tyr Phe Lys Val Cys Leu Lys  
65 70 75 80

## 212583.ST25

Glu Tyr Gln Ser Arg Val Thr Ala Gly Gly Pro Cys Ser Phe Gly Ser  
 85 90 95  
 Gly Ser Thr Pro Val Ile Gly Gly Asn Thr Phe Asn Leu Lys Ala Ser  
 100 105 110  
 Arg Gly Asn Asp Arg Asn Arg Ile Val Leu Pro Phe Ser Phe Ala Trp  
 115 120 125  
 Pro Arg Ser Tyr Thr Leu Leu Val Glu Ala Trp Asp Ser Ser Asn Asp  
 130 135 140  
 Thr Val Gln Pro Asp Ser Ile Ile Glu Lys Ala Ser His Ser Gly Met  
 145 150 155 160  
 Ile Asn Pro Ser Arg Gln Trp Gln Thr Leu Lys Gln Asn Thr Gly Val  
 165 170 175  
 Ala His Phe Glu Tyr Gln Ile Arg Val Thr Cys Asp Asp Tyr Tyr Tyr  
 180 185 190  
 Gly Phe Gly Cys Asn Lys Phe Cys Arg Pro Arg Asp Asp Phe Phe Gly  
 195 200 205  
 His Tyr Ala Cys Asp Gln Asn Gly Asn Lys Thr Cys Met Glu Gly Trp  
 210 215 220  
 Met Gly Pro Glu Cys Asn Arg Ala Ile Cys Arg Gln Gly Cys Ser Pro  
 225 230 235 240  
 Lys His Gly Ser Cys Lys Leu Pro Gly Asp Cys Arg Cys Gln Tyr Gly  
 245 250 255  
 Trp Gln Gly Leu Tyr Cys Asp Lys Cys Ile Pro His Pro Gly Cys Val  
 260 265 270  
 His Gly Ile Cys Asn Glu Pro Trp Gln Cys Leu Cys Glu Thr Asn Trp  
 275 280 285  
 Gly Gly Gln Leu Cys Asp Lys Asp Leu Asn Tyr Cys Gly Thr His Gln  
 290 295 300  
 Pro Cys Leu Asn Gly Gly Thr Cys Ser Asn Thr Gly Pro Asp Lys Tyr  
 305 310 315 320  
 Gln Cys Ser Cys Pro Glu Gly Tyr Ser Gly Pro Asn Cys Glu Ile Ala  
 325 330 335  
 Glu His Ala Cys Leu Ser Asp Pro Cys His Asn Arg Gly Ser Cys Lys  
 340 345 350

## 212583.ST25

Glu Thr Ser<sub>355</sub> Leu Gly Phe Glu Cys<sub>360</sub> Glu Cys Ser Pro Gly<sub>365</sub> Trp Thr Gly  
 Pro Thr<sub>370</sub> Cys Ser Thr Asn Ile<sub>375</sub> Asp Asp Cys Ser Pro<sub>380</sub> Asn Asn Cys Ser  
 His Gly Gly Thr Cys Gln<sub>390</sub> Asp Leu Val Asn Gly<sub>395</sub> Phe Lys Cys Val Cys<sub>400</sub>  
 Pro Pro Gln Trp Thr<sub>405</sub> Gly Lys Thr Cys Gln<sub>410</sub> Leu Asp Ala Asn Glu<sub>415</sub> Cys  
 Glu Ala Lys Pro<sub>420</sub> Cys Val Asn Ala Lys<sub>425</sub> Ser Cys Lys Asn Leu<sub>430</sub> Ile Ala  
 Ser Tyr Tyr<sub>435</sub> Cys Asp Cys Leu Pro<sub>440</sub> Gly Trp Met Gly Gln<sub>445</sub> Asn Cys Asp  
 Ile Asn<sub>450</sub> Ile Asn Asp Cys Leu<sub>455</sub> Gly Gln Cys Gln Asn<sub>460</sub> Asp Ala Ser Cys  
 Arg Asp Leu Val Asn Gly<sub>470</sub> Tyr Arg Cys Ile Cys<sub>475</sub> Pro Pro Gly Tyr Ala<sub>480</sub>  
 Gly Asp His Cys Glu<sub>485</sub> Arg Asp Ile Asp Glu<sub>490</sub> Cys Ala Ser Asn Pro<sub>495</sub> Cys  
 Leu Asn Gly Gly<sub>500</sub> His Cys Gln Asn Glu<sub>505</sub> Ile Asn Arg Phe Gln<sub>510</sub> Cys Leu  
 Cys Pro Thr<sub>515</sub> Gly Phe Ser Gly Asn<sub>520</sub> Leu Cys Gln Leu Asp<sub>525</sub> Ile Asp Tyr  
 Cys Glu<sub>530</sub> Pro Asn Pro Cys Gln<sub>535</sub> Asn Gly Ala Gln Cys<sub>540</sub> Tyr Asn Arg Ala  
 Ser Asp Tyr Phe Cys Lys<sub>550</sub> Cys Pro Glu Asp Tyr<sub>555</sub> Glu Gly Lys Asn Cys<sub>560</sub>  
 Ser His Leu Lys Asp<sub>565</sub> His Cys Arg Thr Thr<sub>570</sub> Pro Cys Glu Val Ile<sub>575</sub> Asp  
 Ser Cys Thr Val<sub>580</sub> Ala Met Ala Ser Asn<sub>585</sub> Asp Thr Pro Glu Gly<sub>590</sub> Val Arg  
 Tyr Ile Ser<sub>595</sub> Ser Asn Val Cys Gly<sub>600</sub> Pro His Gly Lys Cys<sub>605</sub> Lys Ser Gln  
 Ser Gly<sub>610</sub> Gly Lys Phe Thr Cys<sub>615</sub> Asp Cys Asn Lys Gly<sub>620</sub> Phe Thr Gly Thr

## 212583.ST25

Tyr Cys His Glu Asn Ile Asn Asp Cys Glu Ser Asn Pro Cys Arg Asn  
625 630 635 640

Gly Gly Thr Cys Ile Asp Gly Val Asn Ser Tyr Lys Cys Ile Cys Ser  
645 650 655

Asp Gly Trp Glu Gly Ala Tyr Cys Glu Thr Asn Ile Asn Asp Cys Ser  
660 665 670

Gln Asn Pro Cys His Asn Gly Gly Thr Cys Arg Asp Leu Val Asn Asp  
675 680 685

Phe Tyr Cys Asp Cys Lys Asn Gly Trp Lys Gly Lys Thr Cys His Ser  
690 695 700

Arg Asp Ser Gln Cys Asp Glu Ala Thr Cys Asn Asn Gly Gly Thr Cys  
705 710 715 720

Tyr Asp Glu Gly Asp Ala Phe Lys Cys Met Cys Pro Gly Gly Trp Glu  
725 730 735

Gly Thr Thr Cys Asn Ile Ala Arg Asn Ser Ser Cys Leu Pro Asn Pro  
740 745 750

Cys His Asn Gly Gly Thr Cys Val Val Asn Gly Glu Ser Phe Thr Cys  
755 760 765

Val Cys Lys Glu Gly Trp Glu Gly Pro Ile Cys Ala Gln Asn Thr Asn  
770 775 780

Asp Cys Ser Pro His Pro Cys Tyr Asn Ser Gly Thr Cys Val Asp Gly  
785 790 795 800

Asp Asn Trp Tyr Arg Cys Glu Cys Ala Pro Gly Phe Ala Gly Pro Asp  
805 810 815

Cys Arg Ile Asn Ile Asn Glu Cys Gln Ser Ser Pro Cys Ala Phe Gly  
820 825 830

Ala Thr Cys Val Asp Glu Ile Asn Gly Tyr Arg Cys Val Cys Pro Pro  
835 840 845

Gly His Ser Gly Ala Lys Cys Gln Glu Val Ser Gly Arg Pro Cys Ile  
850 855 860

Thr Met Gly Ser Val Ile Pro Asp Gly Ala Lys Trp Asp Asp Asp Cys  
865 870 875 880

Asn Thr Cys Gln Cys Leu Asn Gly Arg Ile Ala Cys Ser Lys Val Trp  
885 890 895



## 212583.ST25

Cys Gly Pro Arg Pro Cys Leu Leu His Lys Gly His Ser Glu Cys Pro  
 900 905 910

Ser Gly Gln Ser Cys Ile Pro Ile Leu Asp Asp Gln Cys Phe Val His  
 915 920 925

Pro Cys Thr Gly Val Gly Glu Cys Arg Ser Ser Ser Leu Gln Pro Val  
 930 935 940

Lys Thr Lys Cys Thr Ser Asp Ser Tyr Tyr Gln Asp Asn Cys Ala Asn  
 945 950 955 960

Ile Thr Phe Thr Phe Asn Lys Glu Met Met Ser Pro Gly Leu Thr Thr  
 965 970 975

Glu His Ile Cys Ser Glu Leu Arg Asn Leu Asn Ile Leu Lys Asn Val  
 980 985 990

Ser Ala Glu Tyr Ser Ile Tyr Ile Ala Cys Glu Pro Ser Pro Ser Ala  
 995 1000 1005

Asn Asn Glu Ile His Val Ala Ile Ser Ala Glu Asp Ile Arg Asp  
 1010 1015 1020

Asp Gly Asn Pro Ile Lys Glu Ile Thr Asp Lys Ile Ile Asp Leu  
 1025 1030 1035

Val Ser Lys Arg Asp Gly Asn Ser Ser Leu Ile Ala Ala Val Ala  
 1040 1045 1050

Glu Val Arg Val Gln Arg Arg Pro Leu Lys Asn Arg Thr Asp Phe  
 1055 1060 1065

Leu Val Pro Leu Leu Ser Ser Val Leu Thr Val Ala Trp Ile Cys  
 1070 1075 1080

Cys Leu Val Thr Ala Phe Tyr Trp Cys Leu Arg Lys Arg Arg Lys  
 1085 1090 1095

Pro Gly Ser His Thr His Ser Ala Ser Glu Asp Asn Thr Thr Asn  
 1100 1105 1110

Asn Val Arg Glu Gln Leu Asn Gln Ile Lys Asn Pro Ile Glu Lys  
 1115 1120 1125

His Gly Ala Asn Thr Val Pro Ile Lys Asp Tyr Glu Asn Lys Asn  
 1130 1135 1140

Ser Lys Met Ser Lys Ile Arg Thr His Asn Ser Glu Val Glu Glu  
 1145 1150 1155

## 212583.ST25

Asp Asp Met Asp Lys His Gln Gln Lys Ala Arg Phe Ala Lys Gln  
1160 1165 1170

Pro Ala Tyr Thr Leu Val Asp Arg Glu Glu Lys Pro Pro Asn Gly  
1175 1180 1185

Thr Pro Thr Lys His Pro Asn Trp Thr Asn Lys Gln Asp Asn Arg  
1190 1195 1200

Asp Leu Glu Ser Ala Gln Ser Leu Asn Arg Met Glu Tyr Ile Val  
1205 1210 1215

<210> 4

<211> 1238

<212> PRT

<213> Homo sapiens

<400> 4

Met Arg Ala Gln Gly Arg Gly Arg Leu Pro Arg Arg Leu Leu Leu Leu  
1 5 10 15

Leu Ala Leu Trp Val Gln Ala Ala Arg Pro Met Gly Tyr Phe Glu Leu  
20 25 30

Gln Leu Ser Ala Leu Arg Asn Val Asn Gly Glu Leu Leu Ser Gly Ala  
35 40 45

Cys Cys Asp Gly Asp Gly Arg Thr Thr Arg Ala Gly Gly Cys Gly His  
50 55 60

Asp Glu Cys Asp Thr Tyr Val Arg Val Cys Leu Lys Glu Tyr Gln Ala  
65 70 75 80

Lys Val Thr Pro Thr Gly Pro Cys Ser Tyr Gly His Gly Ala Thr Pro  
85 90 95

Val Leu Gly Gly Asn Ser Phe Tyr Leu Pro Pro Ala Gly Ala Ala Gly  
100 105 110

Asp Arg Ala Arg Ala Arg Ala Arg Ala Gly Gly Asp Gln Asp Pro Gly  
115 120 125

Leu Val Val Ile Pro Phe Gln Phe Ala Trp Pro Arg Ser Phe Thr Leu  
130 135 140

Ile Val Glu Ala Trp Asp Trp Asp Asn Asp Thr Thr Pro Asn Glu Glu  
145 150 155 160

## 212583.ST25

Leu Leu Ile Glu Arg Val Ser His Ala Gly Met Ile Asn Pro Glu Asp  
 165 170 175  
 Arg Trp Lys Ser Leu His Phe Ser Gly His Val Ala His Leu Glu Leu  
 180 185 190  
 Gln Ile Arg Val Arg Cys Asp Glu Asn Tyr Tyr Ser Ala Thr Cys Asn  
 195 200 205  
 Lys Phe Cys Arg Pro Arg Asn Asp Phe Phe Gly His Tyr Thr Cys Asp  
 210 215 220  
 Gln Tyr Gly Asn Lys Ala Cys Met Asp Gly Trp Met Gly Lys Glu Cys  
 225 230 235 240  
 Lys Glu Ala Val Cys Lys Gln Gly Cys Asn Leu Leu His Gly Gly Cys  
 245 250 255  
 Thr Val Pro Gly Glu Cys Arg Cys Ser Tyr Gly Trp Gln Gly Arg Phe  
 260 265 270  
 Cys Asp Glu Cys Val Pro Tyr Pro Gly Cys Val His Gly Ser Cys Val  
 275 280 285  
 Glu Pro Trp Gln Cys Asn Cys Glu Thr Asn Trp Gly Gly Leu Leu Cys  
 290 295 300  
 Asp Lys Asp Leu Asn Tyr Cys Gly Ser His His Pro Cys Thr Asn Gly  
 305 310 315 320  
 Gly Thr Cys Ile Asn Ala Glu Pro Asp Gln Tyr Arg Cys Thr Cys Pro  
 325 330 335  
 Asp Gly Tyr Ser Gly Arg Asn Cys Glu Lys Ala Glu His Ala Cys Thr  
 340 345 350  
 Ser Asn Pro Cys Ala Asn Gly Gly Ser Cys His Glu Val Pro Ser Gly  
 355 360 365  
 Phe Glu Cys His Cys Pro Ser Gly Trp Ser Gly Pro Thr Cys Ala Leu  
 370 375 380  
 Asp Ile Asp Glu Cys Ala Ser Asn Pro Cys Ala Ala Gly Gly Thr Cys  
 385 390 395 400  
 Val Asp Gln Val Asp Gly Phe Glu Cys Ile Cys Pro Glu Gln Trp Val  
 405 410 415  
 Gly Ala Thr Cys Gln Leu Asp Ala Asn Glu Cys Glu Gly Lys Pro Cys  
 420 425 430

## 212583.ST25

Leu Asn Ala Phe Ser Cys Lys Asn Leu Ile Gly Gly Tyr Tyr Cys Asp  
435 440 445

Cys Ile Pro Gly Trp Lys Gly Ile Asn Cys His Ile Asn Val Asn Asp  
450 455 460

Cys Arg Gly Gln Cys Gln His Gly Gly Thr Cys Lys Asp Leu Val Asn  
465 470 475 480

Gly Tyr Gln Cys Val Cys Pro Arg Gly Phe Gly Gly Arg His Cys Glu  
485 490 495

Leu Glu Arg Asp Lys Cys Ala Ser Ser Pro Cys His Ser Gly Gly Leu  
500 505 510

Cys Glu Asp Leu Ala Asp Gly Phe His Cys His Cys Pro Gln Gly Phe  
515 520 525

Ser Gly Pro Leu Cys Glu Val Asp Val Asp Leu Cys Glu Pro Ser Pro  
530 535 540

Cys Arg Asn Gly Ala Arg Cys Tyr Asn Leu Glu Gly Asp Tyr Tyr Cys  
545 550 555 560

Ala Cys Pro Asp Asp Phe Gly Gly Lys Asn Cys Ser Val Pro Arg Glu  
565 570 575

Pro Cys Pro Gly Gly Ala Cys Arg Val Ile Asp Gly Cys Gly Ser Asp  
580 585 590

Ala Gly Pro Gly Met Pro Gly Thr Ala Ala Ser Gly Val Cys Gly Pro  
595 600 605

His Gly Arg Cys Val Ser Gln Pro Gly Gly Asn Phe Ser Cys Ile Cys  
610 615 620

Asp Ser Gly Phe Thr Gly Thr Tyr Cys His Glu Asn Ile Asp Asp Cys  
625 630 635 640

Leu Gly Gln Pro Cys Arg Asn Gly Gly Thr Cys Ile Asp Glu Val Asp  
645 650 655

Ala Phe Arg Cys Phe Cys Pro Ser Gly Trp Glu Gly Glu Leu Cys Asp  
660 665 670

Thr Asn Pro Asn Asp Cys Leu Pro Asp Pro Cys His Ser Arg Gly Arg  
675 680 685

Cys Tyr Asp Leu Val Asn Asp Phe Tyr Cys Ala Cys Asp Asp Gly Trp  
690 695 700

## 212583.ST25

Lys Gly Lys Thr Cys His Ser Arg Glu Phe Gln Cys Asp Ala Tyr Thr  
 705 710 715 720  
 Cys Ser Asn Gly Gly Thr Cys Tyr Asp Ser Gly Asp Thr Phe Arg Cys  
 725 730 735  
 Ala Cys Pro Pro Gly Trp Lys Gly Ser Thr Cys Ala Val Ala Lys Asn  
 740 745 750  
 Ser Ser Cys Leu Pro Asn Pro Cys Val Asn Gly Gly Thr Cys Val Gly  
 755 760 765  
 Ser Gly Ala Ser Phe Ser Cys Ile Cys Arg Asp Gly Trp Glu Gly Arg  
 770 775 780  
 Thr Cys Thr His Asn Thr Asn Asp Cys Asn Pro Leu Pro Cys Tyr Asn  
 785 790 795 800  
 Gly Gly Ile Cys Val Asp Gly Val Asn Trp Phe Arg Cys Glu Cys Ala  
 805 810 815  
 Pro Gly Phe Ala Gly Pro Asp Cys Arg Ile Asn Ile Asp Glu Cys Gln  
 820 825 830  
 Ser Ser Pro Cys Ala Tyr Gly Ala Thr Cys Val Asp Glu Ile Asn Gly  
 835 840 845  
 Tyr Arg Cys Ser Cys Pro Pro Gly Arg Ala Gly Pro Arg Cys Gln Glu  
 850 855 860  
 Val Ile Gly Phe Gly Arg Ser Cys Trp Ser Arg Gly Thr Pro Phe Pro  
 865 870 875 880  
 His Gly Ser Ser Trp Val Glu Asp Cys Asn Ser Cys Arg Cys Leu Asp  
 885 890 895  
 Gly Arg Arg Asp Cys Ser Lys Val Trp Cys Gly Trp Lys Pro Cys Leu  
 900 905 910  
 Leu Ala Gly Gln Pro Glu Ala Leu Ser Ala Gln Cys Pro Leu Gly Gln  
 915 920 925  
 Arg Cys Leu Glu Lys Ala Pro Gly Gln Cys Leu Arg Pro Pro Cys Glu  
 930 935 940  
 Ala Trp Gly Glu Cys Gly Ala Glu Glu Pro Pro Ser Thr Pro Cys Leu  
 945 950 955 960  
 Pro Arg Ser Gly His Leu Asp Asn Asn Cys Ala Arg Leu Thr Leu His  
 965 970 975

## 212583.ST25

Phe Asn Arg Asp His Val Pro Gln Gly Thr Thr Val Gly Ala Ile Cys  
 980 985 990

Ser Gly Ile Arg Ser Leu Pro Ala Thr Arg Ala Val Ala Arg Asp Arg  
 995 1000 1005

Leu Leu Val Leu Leu Cys Asp Arg Ala Ser Ser Gly Ala Ser Ala  
 1010 1015 1020

Val Glu Val Ala Val Ser Phe Ser Pro Ala Arg Asp Leu Pro Asp  
 1025 1030 1035

Ser Ser Leu Ile Gln Gly Ala Ala His Ala Ile Val Ala Ala Ile  
 1040 1045 1050

Thr Gln Arg Gly Asn Ser Ser Leu Leu Leu Ala Val Thr Glu Val  
 1055 1060 1065

Lys Val Glu Thr Val Val Thr Gly Gly Ser Ser Thr Gly Leu Leu  
 1070 1075 1080

Val Pro Val Leu Cys Gly Ala Phe Ser Val Leu Trp Leu Ala Cys  
 1085 1090 1095

Val Val Leu Cys Val Trp Trp Thr Arg Lys Arg Arg Lys Glu Arg  
 1100 1105 1110

Glu Arg Ser Arg Leu Pro Arg Glu Glu Ser Ala Asn Asn Gln Trp  
 1115 1120 1125

Ala Pro Leu Asn Pro Ile Arg Asn Pro Ile Glu Arg Pro Gly Gly  
 1130 1135 1140

His Lys Asp Val Leu Tyr Gln Cys Lys Asn Phe Thr Pro Pro Pro  
 1145 1150 1155

Arg Arg Ala Asp Glu Ala Leu Pro Gly Pro Ala Gly His Ala Ala  
 1160 1165 1170

Val Arg Glu Asp Glu Glu Asp Glu Asp Leu Gly Arg Gly Glu Glu  
 1175 1180 1185

Asp Ser Leu Glu Ala Glu Lys Phe Leu Ser His Lys Phe Thr Lys  
 1190 1195 1200

Asp Pro Gly Arg Ser Pro Gly Arg Pro Ala His Trp Ala Ser Gly  
 1205 1210 1215

Pro Lys Val Asp Asn Arg Ala Val Arg Ser Ile Asn Glu Ala Arg  
 1220 1225 1230

Tyr Val Gly Lys Glu  
1235

<210> 5

<211> 257

<212> PRT

<213> Homo sapiens

<400> 5

Pro Leu Ala Glu Pro Leu Ala Pro Arg Asp Val Phe Ile Ala Val Lys  
1 5 10 15

Thr Thr Lys Lys Phe His Arg Ala Arg Leu Asp Leu Leu Leu Glu Thr  
20 25 30

Trp Ile Ser Arg His Lys Glu Met Thr Phe Ile Phe Thr Asp Gly Glu  
35 40 45

Asp Glu Ala Leu Ala Arg His Thr Gly Asn Val Val Ile Thr Asn Cys  
50 55 60

Ser Ala Ala His Ser Arg Gln Ala Leu Ser Cys Lys Met Ala Val Glu  
65 70 75 80

Tyr Asp Arg Phe Ile Glu Ser Gly Arg Lys Trp Phe Cys His Val Asp  
85 90 95

Asp Asp Asn Tyr Val Asn Leu Arg Ala Leu Leu Leu Leu Leu Ala Ser  
100 105 110

Tyr Pro His Thr Leu Asp Val Tyr Val Gly Lys Pro Ser Leu Asp Arg  
115 120 125

Pro Ile Gln Ala Met Glu Arg Val Ser Glu Asn Lys Val Arg Pro Val  
130 135 140

His Phe Trp Phe Ala Thr Gly Gly Ala Gly Phe Cys Ile Ser Arg Gly  
145 150 155 160

Leu Ala Leu Lys Met Ser Pro Trp Ala Ser Gly Gly His Phe Met Asn  
165 170 175

Thr Ala Glu Arg Ile Arg Leu Pro Asp Asp Cys Thr Ile Gly Tyr Ile  
180 185 190

Val Glu Ala Leu Leu Gly Val Pro Leu Ile Arg Ser Gly Leu Phe His  
195 200 205

## 212583.ST25

Ser His Leu Glu Asn Leu Gln Gln Val Pro Thr Ser Glu Leu His Glu  
210 215 220

Gln Val Thr Leu Ser Tyr Gly Met Phe Glu Asn Lys Arg Asn Ala Val  
225 230 235 240

His Val Lys Gly Pro Phe Ser Val Glu Ala Asp Pro Ser Arg Trp Gly  
245 250 255

Asn

<210> 6

<211> 321

<212> PRT

<213> Homo sapiens

<400> 6

Met Gln Cys Arg Leu Pro Arg Gly Leu Ala Gly Ala Leu Leu Thr Leu  
1 5 10 15

Leu Cys Met Gly Leu Leu Cys Leu Arg Tyr His Leu Asn Leu Ser Pro  
20 25 30

Gln Arg Val Gln Gly Thr Pro Glu Leu Ser Gln Pro Asn Pro Gly Pro  
35 40 45

Pro Lys Leu Gln Leu His Asp Val Phe Ile Ala Val Lys Thr Thr Arg  
50 55 60

Ala Phe His Arg Leu Arg Leu Glu Leu Leu Leu Asp Thr Trp Val Ser  
65 70 75 80

Arg Thr Arg Glu Leu Thr Phe Val Phe Thr Asp Ser Pro Asp Lys Gly  
85 90 95

Leu Gln Glu Arg Leu Gly Ser His Leu Val Val Thr Asn Cys Ser Ala  
100 105 110

Glu His Ser His Pro Ala Leu Ser Cys Lys Met Ala Ala Glu Phe Asp  
115 120 125

Thr Phe Leu Ala Ser Gly Leu Arg Trp Phe Cys His Val Asp Asp Asp  
130 135 140

Asn Tyr Val Asn Pro Arg Ala Leu Leu Gln Leu Leu Arg Ala Phe Pro  
145 150 155 160



212583.ST25

Leu Ala Arg Asp Val Tyr Val Gly Arg Pro Ser Leu Asn Arg Pro Ile  
165 170 175

His Ala Ser Glu Pro Gln Pro His Asn Arg Thr Arg Leu Val Gln Phe  
180 185 190

Trp Phe Ala Thr Gly Gly Ala Gly Phe Cys Ile Asn Arg Lys Leu Ala  
195 200 205

Leu Lys Met Ala Pro Trp Ala Ser Gly Ser Arg Phe Met Asp Thr Ser  
210 215 220

Ala Leu Ile Arg Leu Pro Asp Asp Cys Thr Met Gly Tyr Ile Ile Glu  
225 230 235 240

Cys Lys Leu Gly Gly Arg Leu Gln Pro Ser Pro Leu Phe His Ser His  
245 250 255

Leu Glu Thr Leu Gln Leu Leu Arg Thr Ala Gln Leu Pro Glu Gln Val  
260 265 270

Thr Leu Ser Tyr Gly Val Phe Glu Gly Lys Leu Asn Val Ile Lys Leu  
275 280 285

Gln Gly Pro Phe Ser Pro Glu Glu Asp Pro Ser Arg Phe Arg Ser Leu  
290 295 300

His Cys Leu Leu Tyr Pro Asp Thr Pro Trp Cys Pro Gln Leu Gly Ala  
305 310 315 320

Arg

<210> 7

<211> 191

<212> PRT

<213> Homo sapiens

<400> 7

Met Ser Arg Ala Arg Gly Ala Leu Cys Arg Ala Cys Leu Ala Leu Ala  
1 5 10 15

Ala Ala Leu Ala Ala Leu Leu Leu Leu Pro Leu Pro Leu Pro Arg Ala  
20 25 30

Pro Ala Pro Ala Arg Thr Pro Ala Pro Ala Pro Arg Ala Pro Pro Ser  
35 40 45

1. **General Information**  
 Name: [Name]  
 Address: [Address]  
 City: [City] State: [State] Zip: [Zip]  
 Phone: [Phone]  
 Date: [Date]

2. **Subject**  
 Title: [Title]  
 Author: [Author]  
 Publisher: [Publisher]  
 Year: [Year]

3. **Summary**  
 [Summary text]

4. **Analysis**  
 [Analysis text]

5. **Conclusion**  
 [Conclusion text]

6. **References**  
 [References list]

7. **Appendix**  
 [Appendix content]

8. **Index**  
 [Index content]

9. **Notes**  
 [Notes content]

10. **Comments**  
 [Comments content]

Lys Thr Thr Arg Lys Asn His Gly Pro Arg Leu Arg Leu Leu Leu Arg  
65 70 75 80

Asp Asp Pro Glu Leu Glu Leu Gln Gly Gly Asp Arg Val Ile Asn Thr  
100 105 110

Val Glu Tyr Asp Lys Phe Ile Glu Ser Gly Arg Lys Trp Phe Cys His  
130 135 140

Ser Ser Phe Ser Pro Ser Gln Asp Val Tyr Leu Gly Arg Pro Ser Leu  
165 170 175

<210> 8

<211> 1404

<212> PRT

<213> Drosophila melanogaster

<400> 8

Glu Ser Thr Ile Glu Ser Ala Asp Ser Leu Gly Met Ser Lys Lys Thr  
20 25 30

Ala Thr Lys Arg Gln Arg Pro Arg His Arg Val Pro Lys Ile Ala Thr  
35 40 45

Leu Pro Ser Thr Ile Arg Asp Cys Arg Ser Leu Lys Ser Ala Cys Asn  
50 55 60

Leu Ile Ala Leu Ile Leu Ile Leu Val His Lys Ile Ser Ala Ala  
65 70 75 80

## 212583.ST25

Gly Asn Phe Glu Leu Glu Ile Leu Glu Ile Ser Asn Thr Asn Ser His  
 85 90 95  
 Leu Leu Asn Gly Tyr Cys Cys Gly Met Pro Ala Glu Leu Arg Ala Thr  
 100 105 110  
 Lys Thr Ile Gly Cys Ser Pro Cys Thr Thr Ala Phe Arg Leu Cys Leu  
 115 120 125  
 Lys Glu Tyr Gln Thr Thr Glu Gln Gly Ala Ser Ile Ser Thr Gly Cys  
 130 135 140  
 Ser Phe Gly Asn Ala Thr Thr Lys Ile Leu Gly Gly Ser Ser Phe Val  
 145 150 155 160  
 Leu Ser Asp Pro Gly Val Gly Ala Ile Val Leu Pro Phe Thr Phe Arg  
 165 170 175  
 Trp Thr Lys Ser Phe Thr Leu Ile Leu Gln Ala Leu Asp Met Tyr Asn  
 180 185 190  
 Thr Ser Tyr Pro Asp Ala Glu Arg Leu Ile Glu Glu Thr Ser Tyr Ser  
 195 200 205  
 Gly Val Ile Leu Pro Ser Pro Glu Trp Lys Thr Leu Asp His Ile Gly  
 210 215 220  
 Arg Asn Ala Arg Ile Thr Tyr Arg Val Arg Val Gln Cys Ala Val Thr  
 225 230 235 240  
 Tyr Tyr Asn Thr Thr Cys Thr Thr Phe Cys Arg Pro Arg Asp Asp Gln  
 245 250 255  
 Phe Gly His Tyr Ala Cys Gly Ser Glu Gly Gln Lys Leu Cys Leu Asn  
 260 265 270  
 Gly Trp Gln Gly Val Asn Cys Glu Glu Ala Ile Cys Lys Ala Gly Cys  
 275 280 285  
 Asp Pro Val His Gly Lys Cys Asp Arg Pro Gly Glu Cys Glu Cys Arg  
 290 295 300  
 Pro Gly Trp Arg Gly Pro Leu Cys Asn Glu Cys Met Val Tyr Pro Gly  
 305 310 315 320  
 Cys Lys His Gly Ser Cys Asn Gly Ser Ala Trp Lys Cys Val Cys Asp  
 325 330 335  
 Thr Asn Trp Gly Gly Ile Leu Cys Asp Gln Asp Leu Asn Phe Cys Gly  
 340 345 350

## 212583.ST25

Thr His Glu Pro Cys Lys His Gly Gly Thr Cys Glu Asn Thr Ala Pro  
355 360 365

Asp Lys Tyr Arg Cys Thr Cys Ala Glu Gly Leu Ser Gly Glu Gln Cys  
370 375 380

Glu Ile Val Glu His Pro Cys Ala Thr Arg Pro Cys Arg Asn Gly Gly  
385 390 395 400

Thr Cys Thr Leu Lys Thr Ser Asn Arg Thr Gln Ala Gln Val Tyr Arg  
405 410 415

Thr Ser His Gly Arg Ser Asn Met Gly Arg Pro Val Arg Arg Ser Ser  
420 425 430

Ser Met Arg Ser Leu Asp His Leu Arg Pro Glu Gly Gln Ala Leu Asn  
435 440 445

Gly Ser Ser Ser Ser Gly Leu Val Ser Leu Gly Ser Leu Gln Leu Gln  
450 455 460

Gln Gln Leu Ala Pro Asp Phe Thr Cys Asp Cys Ala Ala Gly Trp Thr  
465 470 475 480

Gly Pro Thr Cys Glu Ile Asn Ile Asp Glu Cys Ala Gly Gly Pro Cys  
485 490 495

Glu His Gly Gly Thr Cys Ile Asp Leu Ile Gly Gly Phe Arg Cys Glu  
500 505 510

Cys Pro Pro Glu Trp His Gly Asp Val Cys Gln Val Asp Val Asn Glu  
515 520 525

Cys Glu Ala Pro His Ser Ala Gly Ile Ala Ala Asn Ala Leu Leu Thr  
530 535 540

Thr Thr Ala Thr Ala Ile Ile Gly Ser Asn Leu Ser Ser Thr Ala Leu  
545 550 555 560

Leu Ala Ala Leu Thr Ser Ala Val Ala Ser Thr Ser Leu Ala Ile Gly  
565 570 575

Pro Cys Ile Asn Ala Lys Glu Cys Arg Asn Gln Pro Gly Ser Phe Ala  
580 585 590

Cys Ile Cys Lys Glu Gly Trp Gly Gly Val Thr Cys Ala Glu Asn Leu  
595 600 605

Asp Asp Cys Val Gly Gln Cys Arg Asn Gly Ala Thr Cys Ile Asp Leu  
610 615 620

## 212583.ST25

Val Asn Asp Tyr Arg Cys Ala Cys Ala Ser Gly Phe Thr Gly Arg Asp  
625 630 635 640

Cys Glu Thr Asp Ile Asp Glu Cys Ala Thr Ser Pro Cys Arg Asn Gly  
645 650 655

Gly Glu Cys Val Asp Met Val Gly Lys Phe Asn Cys Ile Cys Pro Leu  
660 665 670

Gly Tyr Ser Gly Ser Leu Cys Glu Glu Ala Lys Glu Asn Cys Thr Pro  
675 680 685

Ser Pro Cys Leu Glu Gly His Cys Leu Asn Thr Pro Glu Gly Tyr Tyr  
690 695 700

Cys His Cys Pro Pro Asp Arg Ala Gly Lys His Cys Glu Gln Leu Arg  
705 710 715 720

Pro Leu Cys Ser Gln Pro Pro Cys Asn Glu Gly Cys Phe Ala Asn Val  
725 730 735

Ser Leu Ala Thr Ser Ala Thr Thr Thr Thr Thr Thr Thr Thr Ala  
740 745 750

Thr Thr Thr Arg Lys Met Ala Lys Pro Ser Gly Leu Pro Cys Ser Gly  
755 760 765

His Gly Ser Cys Glu Met Ser Asp Val Gly Thr Phe Cys Lys Cys His  
770 775 780

Val Gly His Thr Gly Thr Phe Cys Glu His Asn Leu Asn Glu Cys Ser  
785 790 795 800

Pro Asn Pro Cys Arg Asn Gly Gly Ile Cys Leu Asp Gly Asp Gly Asp  
805 810 815

Phe Thr Cys Glu Cys Met Ser Gly Trp Thr Gly Lys Arg Cys Ser Glu  
820 825 830

Arg Ala Thr Gly Cys Tyr Ala Gly Gln Cys Gln Asn Gly Gly Thr Cys  
835 840 845

Met Pro Gly Ala Pro Asp Lys Ala Leu Gln Pro His Cys Arg Cys Ala  
850 855 860

Pro Gly Trp Thr Gly Leu Phe Cys Ala Glu Ala Ile Asp Gln Cys Arg  
865 870 875 880

Gly Gln Pro Cys His Asn Gly Gly Thr Cys Glu Ser Gly Ala Gly Trp  
885 890 895

## 212583.ST25

Phe Arg Cys Val Cys Ala Gln Gly Phe Ser Gly Pro Asp Cys Arg Ile  
 900 905 910

Asn Val Asn Glu Cys Ser Pro Gln Pro Cys Gln Gly Gly Ala Thr Cys  
 915 920 925

Ile Asp Gly Ile Gly Gly Tyr Ser Cys Ile Cys Pro Pro Gly Arg His  
 930 935 940

Gly Leu Arg Cys Glu Ile Leu Leu Ser Asp Pro Lys Ser Ala Cys Gln  
 945 950 955 960

Asn Ala Ser Asn Thr Ile Ser Pro Tyr Thr Ala Leu Asn Arg Ser Gln  
 965 970 975

Asn Trp Leu Asp Ile Ala Leu Thr Gly Arg Thr Glu Asp Asp Glu Asn  
 980 985 990

Cys Asn Ala Cys Val Cys Glu Asn Gly Thr Ser Arg Cys Thr Asn Leu  
 995 1000 1005

Trp Cys Gly Leu Pro Asn Cys Tyr Lys Val Asp Pro Leu Ser Lys  
 1010 1015 1020

Ser Ser Asn Leu Ser Gly Val Cys Lys Gln His Glu Val Cys Val  
 1025 1030 1035

Pro Ala Leu Ser Glu Thr Cys Leu Ser Ser Pro Cys Asn Val Arg  
 1040 1045 1050

Gly Asp Cys Arg Ala Leu Glu Pro Ser Arg Arg Val Ala Pro Pro  
 1055 1060 1065

Arg Leu Pro Ala Lys Ser Ser Cys Trp Pro Asn Gln Ala Val Val  
 1070 1075 1080

Asn Glu Asn Cys Ala Arg Leu Thr Ile Leu Leu Ala Leu Glu Arg  
 1085 1090 1095

Val Gly Lys Gly Ala Ser Val Glu Gly Leu Cys Ser Leu Val Arg  
 1100 1105 1110

Val Leu Leu Ala Ala Gln Leu Ile Lys Lys Pro Ala Ser Thr Phe  
 1115 1120 1125

Gly Gln Asp Pro Gly Met Leu Met Val Leu Cys Asp Leu Lys Thr  
 1130 1135 1140

Gly Thr Asn Asp Thr Val Glu Leu Thr Val Ser Ser Ser Lys Leu  
 1145 1150 1155

## 212583.ST25

Asn Asp Pro Gln Leu Pro Val Ala Val Gly Leu Leu Gly Glu Leu  
 1160 1165 1170  
 Leu Ser Ser Arg Gln Leu Asn Gly Ile Gln Arg Arg Lys Glu Leu  
 1175 1180 1185  
 Glu Leu Gln His Ala Lys Leu Ala Ala Leu Thr Ser Ile Val Glu  
 1190 1195 1200  
 Val Lys Leu Glu Thr Ala Arg Val Ala Asp Gly Ser Gly His Ser  
 1205 1210 1215  
 Leu Leu Ile Gly Val Leu Cys Gly Val Phe Ile Val Leu Val Gly  
 1220 1225 1230  
 Phe Ser Val Phe Ile Ser Leu Tyr Trp Lys Gln Arg Leu Ala Tyr  
 1235 1240 1245  
 Arg Thr Ser Ser Gly Met Asn Leu Thr Pro Ser Leu Asp Ala Leu  
 1250 1255 1260  
 Arg His Glu Glu Glu Lys Ser Asn Asn Leu Gln Asn Glu Glu Asn  
 1265 1270 1275  
 Leu Arg Arg Tyr Thr Asn Pro Leu Lys Gly Ser Thr Ser Ser Leu  
 1280 1285 1290  
 Arg Ala Ala Thr Gly Met Glu Leu Ser Leu Asn Pro Ala Pro Glu  
 1295 1300 1305  
 Leu Ala Ala Ser Ala Ala Ser Ser Ser Ala Leu His Arg Ser Gln  
 1310 1315 1320  
 Pro Leu Phe Pro Pro Cys Asp Phe Glu Arg Glu Leu Asp Ser Ser  
 1325 1330 1335  
 Thr Gly Leu Lys Gln Ala His Lys Arg Ser Ser Gln Ile Leu Leu  
 1340 1345 1350  
 His Lys Thr Gln Asn Ser Asp Met Arg Lys Asn Thr Val Gly Ser  
 1355 1360 1365  
 Leu Asp Ser Pro Arg Lys Asp Phe Gly Lys Arg Ser Ile Asn Cys  
 1370 1375 1380  
 Lys Ser Met Pro Pro Ser Ser Gly Asp Glu Gly Ser Asp Val Leu  
 1385 1390 1395  
 Ala Thr Thr Val Met Val  
 1400

<210> 9  
 <211> 17  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> JAG-1b Notch ligand  
 <220>  
 <221> misc\_feature  
 <223> JAG-1c Notch ligand

<400> 9  
 Ala Asp Asp Tyr Tyr Tyr Gly Phe Gly Ala Asn Lys Phe Gly Arg Pro  
 1 5 10 15

Arg

<210> 10  
 <211> 21  
 <212> PRT  
 <213> artificial/unknown

<220>  
 <221> misc\_feature  
 <223> JAG-1c Notch ligand

<400> 10  
 Ala Asp Asp Tyr Tyr Tyr Gly Phe Gly Ala Asn Lys Phe Gly Arg Pro  
 1 5 10 15

Arg Asp Asp Phe Phe  
 20

<210> 11  
 <211> 17  
 <212> PRT  
 <213> artificial/unknown



&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;223&gt; JAG-1 Notch ligand

&lt;400&gt; 11

Cys Asp Asp Tyr Tyr Tyr Gly Phe Gly Cys Asn Lys Phe Cys Arg Pro  
 1 5 10 15

Arg

&lt;210&gt; 12

&lt;211&gt; 19

&lt;212&gt; PRT

&lt;213&gt; artificial/unknown

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;223&gt; r-JAG1 Notch ligand

&lt;400&gt; 12

Cys Asp Asp Tyr Tyr Tyr Gly Phe Gly Cys Asn Lys Phe Gly Arg Pro  
 1 5 10 15

Arg Asp Asp

&lt;210&gt; 13

&lt;211&gt; 17

&lt;212&gt; PRT

&lt;213&gt; artificial/unknown

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;223&gt; Scrambled JAG peptide

&lt;400&gt; 13

212583.ST25

Arg Cys Gly Pro Asp Cys Phe Asp Asn Tyr Gly Arg Tyr Lys Tyr Cys  
 1 5 10 15

Phe

<210> 14

<211> 22

<212> DNA

<213> artificial/unknown

<220>

<221> misc\_feature

<223> NF kappa B oligonucleotide

<400> 14

agttgagggg actttcccag gc

22

<210> 15

<211> 282

<212> DNA

<213> Artificial/Unknown

<220>

<221> misc\_feature

<223> Human Notch repeats 11-12 - a Notch antagnoist polypeptide

<220>

<221> exon

<222> (1)..(282)

<223>

<220>

<221> misc\_feature

<222> (1)..(33)

<223> encodes a tag that is dispensible for Notch antagnoistic activity

## 212583.ST25

```

<400> 15
atg gct gca gaa ttc cat cat cat cat cat cat cat cag gac gtg gat gag      48
Met Ala Ala Glu Phe His His His His His His Gln Asp Val Asp Glu
1          5          10          15

tgc tcg ctg ggt gcc aac ccc tgc gag cat gcg ggc aag tgc atc aac      96
Cys Ser Leu Gly Ala Asn Pro Cys Glu His Ala Gly Lys Cys Ile Asn
          20          25          30

acg ctg ggc tcc ttc gag tgc cag tgt ctg cag ggc tac acg ggc ccc      144
Thr Leu Gly Ser Phe Glu Cys Gln Cys Leu Gln Gly Tyr Thr Gly Pro
          35          40          45

cga tgc gag atc gac gtc aac gag tgc gtc tcg aac ccg tgc cag aac      192
Arg Cys Glu Ile Asp Val Asn Glu Cys Val Ser Asn Pro Cys Gln Asn
          50          55          60

gac gcc acc tgc ctg gac cag att ggg gag ttc cag tgc atg tgc atg      240
Asp Ala Thr Cys Leu Asp Gln Ile Gly Glu Phe Gln Cys Met Cys Met
65          70          75          80

ccc ggc tac gag ggt gtg cac tgc gag gtc aac aca tga tga      282
Pro Gly Tyr Glu Gly Val His Cys Glu Val Asn Thr
          85          90

```

&lt;210&gt; 16

&lt;211&gt; 92

&lt;212&gt; PRT

&lt;213&gt; Artificial/Unknown

&lt;220&gt;

&lt;221&gt; Misc

&lt;222&gt; (1)..(92)

&lt;223&gt; Notch antagonist polypeptide containing tag sequence

&lt;220&gt;

&lt;221&gt; Misc

&lt;222&gt; (1)..(11)

&lt;223&gt; tag sequence for detecting polypeptide

&lt;220&gt;

&lt;221&gt; Misc

&lt;222&gt; (12)..(92)

&lt;223&gt; human Notch repeats 11 and 12

&lt;400&gt; 16

## 212583.ST25

Met Ala Ala Glu Phe His His His His His His Gln Asp Val Asp Glu  
1 5 10 15

Cys Ser Leu Gly Ala Asn Pro Cys Glu His Ala Gly Lys Cys Ile Asn  
20 25 30

Thr Leu Gly Ser Phe Glu Cys Gln Cys Leu Gln Gly Tyr Thr Gly Pro  
35 40 45

Arg Cys Glu Ile Asp Val Asn Glu Cys Val Ser Asn Pro Cys Gln Asn  
50 55 60

Asp Ala Thr Cys Leu Asp Gln Ile Gly Glu Phe Gln Cys Met Cys Met  
65 70 75 80

Pro Gly Tyr Glu Gly Val His Cys Glu Val Asn Thr  
85 90

<210> 17

<211> 249

<212> DNA

<213> Artificial/Unknown

<220>

<221> exon

<222> (1)..(249)

<223> Encodes human Notch repeats 11-12

<400> 17  
cag gac gtg gat gag tgc tcg ctg ggt gcc aac ccc tgc gag cat gcg 48  
Gln Asp Val Asp Glu Cys Ser Leu Gly Ala Asn Pro Cys Glu His Ala  
1 5 10 15

ggc aag tgc atc aac acg ctg ggc tcc ttc gag tgc cag tgt ctg cag 96  
Gly Lys Cys Ile Asn Thr Leu Gly Ser Phe Glu Cys Gln Cys Leu Gln  
20 25 30

ggc tac acg ggc ccc cga tgc gag atc gac gtc aac gag tgc gtc tcg 144  
Gly Tyr Thr Gly Pro Arg Cys Glu Ile Asp Val Asn Glu Cys Val Ser  
35 40 45

aac ccg tgc cag aac gac gcc acc tgc ctg gac cag att ggg gag ttc 192  
Asn Pro Cys Gln Asn Asp Ala Thr Cys Leu Asp Gln Ile Gly Glu Phe  
50 55 60

cag tgc atg tgc atg ccc ggc tac gag ggt gtg cac tgc gag gtc aac 240  
Gln Cys Met Cys Met Pro Gly Tyr Glu Gly Val His Cys Glu Val Asn  
65 70 75 80

aca tga tga 249  
Thr

&lt;210&gt; 18

&lt;211&gt; 81

&lt;212&gt; PRT

&lt;213&gt; Artificial/Unknown

&lt;220&gt;

&lt;221&gt; misc

&lt;222&gt; (1)..(81)

&lt;223&gt; Human Notch repeats 11 and 12 - functions as Notch antagonist

&lt;400&gt; 18

Gln Asp Val Asp Glu Cys Ser Leu Gly Ala Asn Pro Cys Glu His Ala  
 1 5 10 15

Gly Lys Cys Ile Asn Thr Leu Gly Ser Phe Glu Cys Gln Cys Leu Gln  
 20 25 30

Gly Tyr Thr Gly Pro Arg Cys Glu Ile Asp Val Asn Glu Cys Val Ser  
 35 40 45

Asn Pro Cys Gln Asn Asp Ala Thr Cys Leu Asp Gln Ile Gly Glu Phe  
 50 55 60

Gln Cys Met Cys Met Pro Gly Tyr Glu Gly Val His Cys Glu Val Asn  
 65 70 75 80

Thr